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USER'S MANUAL

COMPEX

MRL21E

MRL21E

MRL21E

MRL21E

MRL21E

Manual Number: U-0493-V1.2C

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About This Document

This document may become superseded, in which case you may find its latest version at: http://www.compex.com.sg/home/download.asp

The product described in this document, Compex ADSL 2/2+ Ethernet Modem Router Series, MRL21E, is a licensed product of Compex Systems Pte Ltd. This document contains instructions for installing, configuring and using Compex MRL21E. It also gives an overview of the key applications and the networking concepts with respect to the product.

This documentation is for both Network Administrators and the end-users who possess some basic knowledge in the networking structure and protocols.

It makes a few assumptions that the host computer has already been installed with TCP/IP and ready to access Internet. Procedures for Microsoft Windows 98SE/ME/2000/XP operating systems are included in this document. However, for other operating system, you may need to refer to your operating system's documentation for networking instruction.

Firmware

Please take note that this User's Manual is written based on Compex MRL21E Firmware Release 2.2

Conventions

In this document, special conventions are used to help present the information clearly. The Compex ADSL2/2+ Ethernet Modem Router MRL21E is often referred to as Compex MRL21E in this document. Here is a list of conventions used within the manual:

This symbol signifies an important notice to be heeded. The user is advised to read the instructions carefully before proceeding further.

eXpert

This symbol represents a section meant for advanced users, or specific features meant for exceptional non-standard applications. The user is assumed to have relevant network knowledge to carry out the necessary configuration or understand the information given.

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CHAPTER 1: INTRODUCTION

Thank you for purchasing the Compex MRL21E ADSL 2/2+ Ethernet Modem Router! We are committed to deliver, meet and even exceed your expectations of a high-performance, feature-rich, user-friendly and cost-effective modem router device. We are excited that you will soon be discovering more about a product that we have proudly developed.

Compex MRL21E is a broadband Internet access device, which utilizes the high frequency segment of the phone line to transmit high-speed data without affecting the voice transmission. This means that you can make a phone call and access the Internet at the same time. The frequency of the ADSL signal is higher than that of voice, so voice and ADSL signal can coexist in one telephone line by using a splitter to insulate each from the other. ADSL data transfer adopts the asymmetric model. It supports upload transmission speeds of up to 1Mbps and download speeds of up to 24Mbps for ADSL2+.

Therefore, Internet applications such as synchronous transmission of video stream, online games and downloading of files are made possible.

CHAPTER 2: GETTING TO KNOW YOUR PRODUCT

2.1 KEY FEATURES

Your Compex MRL21E is endowed with a high-performance design and a rich feature set. To maximize the potential of your purchase, we have highlighted a list of features to help you get familiarized with it:

- Compliance with ANSI T1.413 ISSUE 2, ITU G.992.1 (G.DMT), ITU G.992.2 (G.LITE), ITU G992.3 and ITU G992.5
- Web-based configuration and monitoring
- Routing function
- NAPT function
- DHCP function

2.3 PANEL VIEWS

The Compex MRL21E has been designed such that it can be conveniently placed on a desktop. The LED indicators denoting network status and activity are situated on the front edge of the modem for easy visibility.

NOTICE: Actual product appearance may slightly differ depending on the hardware version.

Front View

2.3.1 PANEL DESCRIPTION

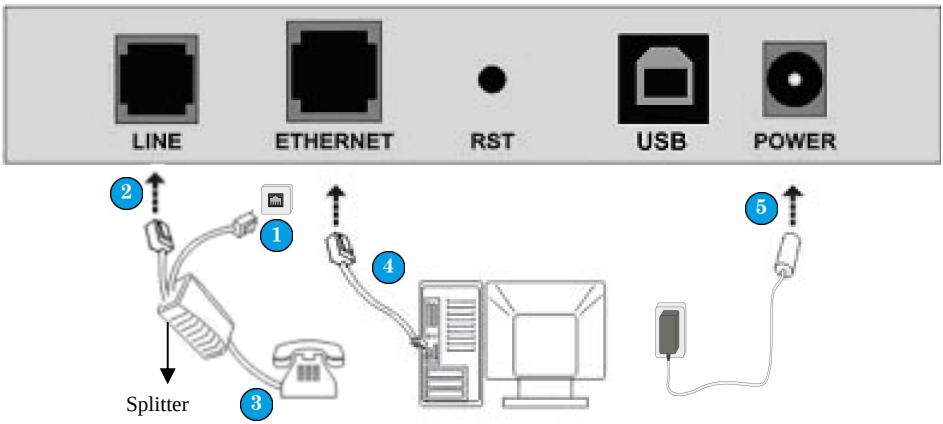
Label	Indicator	Description
1	**Power** (LED)	• ***Steady RED:*** Power is turned on • ***Off:*** Power is turned off.
2	**LINK** (LED)	• ***Steady YELLOW:*** The modem has good Internet connectivity • ***Flashing YELLOW:*** The modem is in the handshaking status. • ***Off:*** Internet connection is not established.
3	**DATA** (LED)	• ***Steady GREEN:*** Connected to the PC. • ***Fast Flashing GREEN:*** Transmitting or receiving data. • ***Off:*** Not properly connected to the PC.
4	**PC/USB** (LED)	• ***Steady GREEN:*** Cable is connected. • ***Fast Flashing GREEN:*** Transforming data • ***Off:*** No cable is detected.

CHAPTER 3: LET'S GET GOING - HARDWARE SETUP

3.1 POWER UP IN 6 STEPS:

In 6 simple steps, you shall have your router running and functional. After which, you may proceed to the software configuration to get ready to surf the Internet at high-speed!

Panel View of Compex MRL21E



1	Use a telephone cord to connect the **LINE** port of the splitter with the RJ-11 port (the phone jack) on the wall.
2	Use the other telephone cord to connect the **ADSL** port of the splitter with the **LINE** port of the Compex MRL21E.
3	Use another telephone cord to connect the telephone set with the **PHONE** port of the splitter.
4	Connect the **Ethernet** port of the Compex MRL21E with the 10/100BASE-T port of the computer using the RJ45 network cable that comes with the modem.
5	Plug in the power cord and turn on the power for the modem.
6	Turn on your PC.

CHAPTER 4: LET'S GET GOING - SOFTWARE SETUP

4.1 PREPARING THE PCS + MODEM ROUTER

The Compex MRL21E comes with a powerful array of features that can be administered via a web-based configuration interface. This section of software setup will be presented in two essential portions aimed to quickly enable effective use of the product:

- **Configuring the PCs -** Concerns the Preparation of PCs for network access
- **Basic Compex MRL21E Setup -** Covers steps for online access & Internet sharing

4.1.1 Configuring the PCs

The instructions found here will help you configure each of your computers to communicate with the Compex MRL21E.

> For Computers that will be connected to the Fast Ethernet via cables:

The first step is to make sure the PC gets an IP address that it will use to communicate with the modem router and with other PCs across the network. You can begin by setting up your PC to function as a DHCP client, configuring its network settings to obtain an IP address automatically from Compex MRL21E. Alternatively, you may want to give your PC a static IP address if you are an expert user.

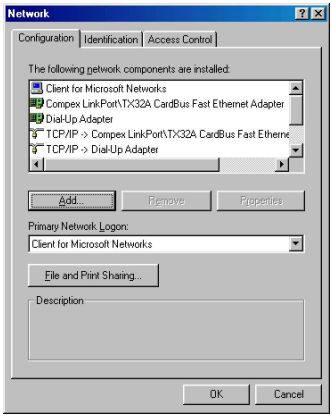
Whether you choose to allocate static or dynamic IP settings, the next few pages will walk you through the performance of this TCP/IP configuration in a step-by-step process. You may skip to Part 1(a), (b), (c) or (d) according to the Microsoft Windows operating system you use. Please ensure that you have an Ethernet or wireless adapter (also known as a network adapter) successfully installed in each PC you are configuring.

Important: By default, Windows 98SE, ME, 2000 and XP have the TCP/IP protocol installed and set to obtain an IP address automatically.

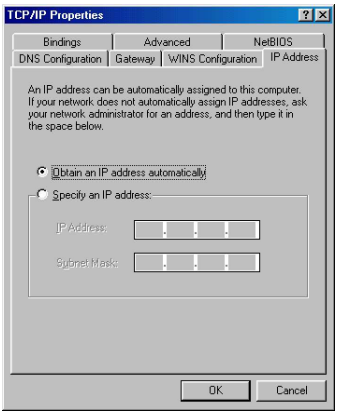
Part 1(a): Configuring your PC to Dynamically obtain an IP address...

If you are using Microsoft Windows 98SE or Windows Millennium

1. Click the **Start** button. Select **Settings** and click the **Control Panel** icon. Then double-click the **Network** icon. You will see the Network dialog on the right.



2. On the **Configuration** tab, highlight the **TCP/IP** line corresponding to your Ethernet adapter and click on the **Properties** button. You will be brought to the **TCP/IP Properties** page below.


TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.
Obtain an IP address automatically
Specify an IP address:
IP Address:
Subnet Mask:
OK
Cancel

3. Click on the **IP Address** tab, and select **Obtain an IP address automatically**.

4. Next, click the **Gateway** tab, and verify that the **Installed Gateway** field is blank. Now, click the **OK** button

5. On the Network dialog page, click on the **OK** button.

6. Windows may ask you to restart the PC, if so, click the **Yes** button and allow the PC to restart. If not, restart the PC to complete the configuration.

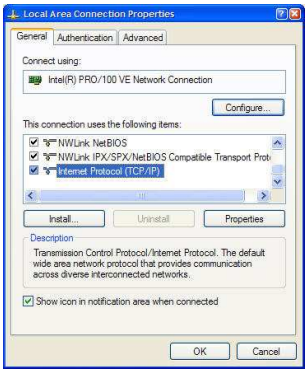
Part 1(b): Configuring your PC to Dynamically obtain an IP address...

b

If you are using Microsoft Windows 2000 or Windows XP

1. Click the **Start** button. Select **Settings** and click the **Control Panel** icon. Then double-click the **Network and Dial-up Connection** (Windows 2000) or **Network Connection** (Windows XP) icon.

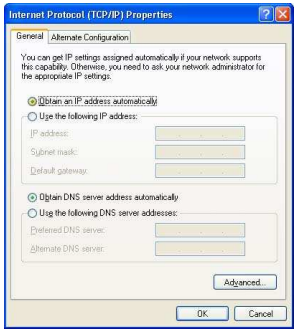
2. Double-click the **Local Area Connection** icon for the Ethernet adapter applicable to your Internet connection, and click the **Properties** button. You will be brought to the dialog page below.



3. On the **General** tab, make sure the box next to **Internet Protocol (TCP/IP)** is checked. Then highlight **Internet Protocol (TCP/IP)**, and click the **Properties** button.

4. Select **Obtain an IP address automatically**.

Then click the **OK** button on this page, and the **OK** button on the previous page it returns you to.

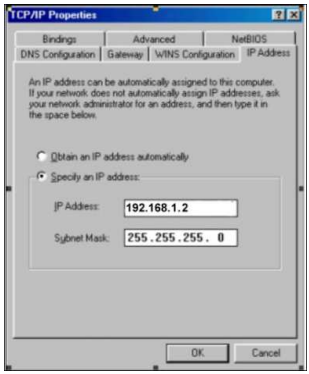

Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Part 1(c): Configuring your PC with a Static IP address...

If you are using Microsoft Windows 98SE or Windows Millennium

1. To begin the Static IP address configuration, follow steps 1 & 2 of Part 1(a) to get to the page on the right.

2. Click on the **IP Address** tab. Then type in an **IP address** and **Subnet Mask** of 192.168.1.X and 255.255.255.0 respectively, where X is any number from 2 to 254.



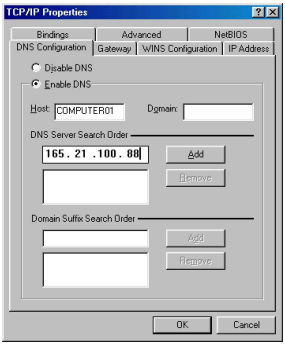
(Note that the default IP address of the Compex MRI21E is 192.168.1.1)

3. Next, click the **Gateway** tab to see the dialog page on the left.

4. Under the **New Gateway** field, key in the IP address of the Compex MRI21E where its default is 192.168.1.1. Follow up by clicking the **Add** button.

5. Now, select the **DNS Configuration** tab and on the page you see, select **Enable DNS**. Type in a preferred name as the **Host**. Then, follow that up by keying in the IP address of your DNS Server in the **DNS Server Search Order** field and press the **Add** button.

6. You can complete the set up by clicking the **OK** button, and then restarting the computer.



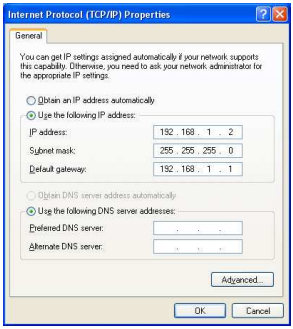
Important: For the steps, you should not configure more than one computer with the IP address or the same host name within a network. This will result in a conflict.
The DNS Server's IP address required in step 5 should be provided by your Internet Service Provider (ISP). If you are unsure about it, please contact your ISP.

eXpert Part 1(d): Configuring your PC with a Static IP address...

If you are using Microsoft Windows 2000 or Windows XP

1. To begin the Static IP address configuration, follow steps 1, 2 & 3 of Part 1(b) to get to the page on the right.

2. Select **Use the following IP address**, and then key in 192.168.1.X for the **IP address** field, where X is any number from 2 to 254. Following that, enter 255.255.255.0 for the **Subnet mask**, and key in the IP address of the Compex MRI21E as the **Default gateway**.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 2
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
192 . 168 . 1 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

(Note that the default IP address of the Compex MRL21E is 192.168.1.1)

3. Now select **Use the following DNS server addresses**, and then key in the IP address of your DNS server in the **Preferred DNS server field.** Finally, click the **OK** button to complete.

Completing Part 1, we have set up our PCs. We will now be ready to discuss both the Basic and Advanced setup of the modem router configurations to go online!

4.1.2 Basic Modem Router Setup

In this portion on the basic set up, you will find information on how you may configure the Compex MRL21E to function in your network, to access the Internet and begin sharing the connection with your wired and wireless clients. Please note that our examples use the default settings of the modem router.

Part 2: Getting Ready to go Online!

Accessing the Basic Web-based Configuration Interface

1. Connect to the router by typing http://www.192.168.1.1 in the address field of your Internet browser.

2. The **Connect to 192.168.1.1** window appears. When prompted, enter **admin** for the user name, and **password** for the password. Both of the entries must be in lowercase letters.

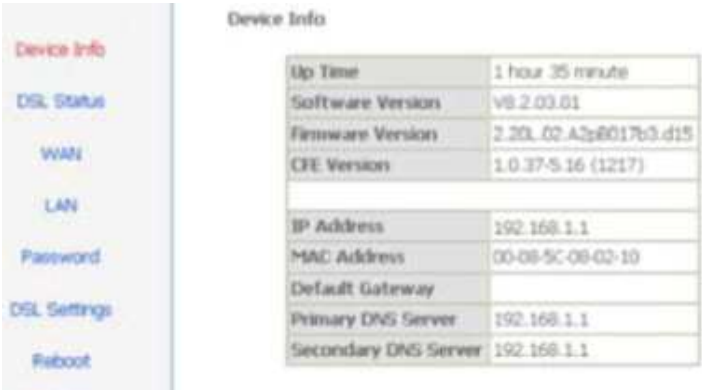
3. Click **OK** to log in.

4. After logging in, you will see the basic web-based configuration menu below:

You can double-click the hyperlinks on the left side of the web-based configuration menu to access the features below:

Device Info:

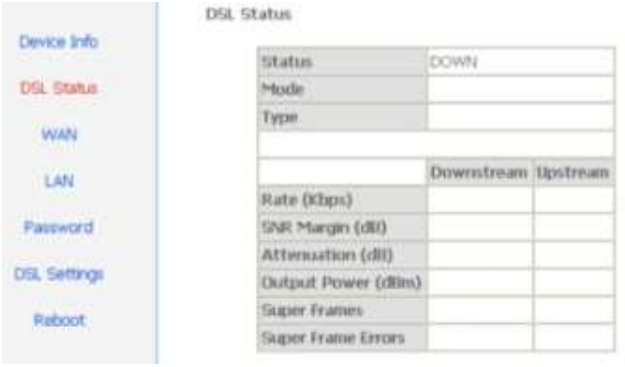
Clicking on the **Device Info** hyperlink, the **Device Info** page (as shown on the right side of the browser) provides you a quick overview of the network settings. This is a useful summary of the operating parameters you have applied to the router.



The **Device Info** page reveals the Compex MRI21E settings that you have executed.

DSL Status:

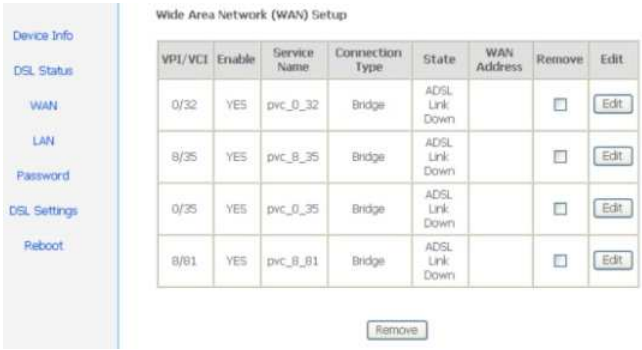
Clicking on the **DSL Status** hyperlink, the **DSL Status** page (as shown on the right side of the browser) provides with you a quick overview of the **DSL Status** of the router.



The **DSL Status** page reveals the DSL information of Compex MRI21E.

WAN:

Clicking on the **WAN** hyperlink, the **Wide Area Network (WAN) Setup** page allows you to glance at the summary of the router's WAN settings and to configure other WAN parameters.


Device Info
DSL Status
WAN
LAN
Password
DSL Settings
Reboot
Wide Area Network (WAN) Setup
VPI/VCI Enable Service Name Connection Type State WAN Address Remove Edit
0/32 YES pvc_0_32 Bridge ADSL Link Down Edit
8/35 YES pvc_8_35 Bridge ADSL Link Down Edit
0/35 YES pvc_0_35 Bridge ADSL Link Down Edit
8/81 YES pvc_8_81 Bridge ADSL Link Down Edit
Remove

IAN:

Clicking on the **IAN** hyperlink, the **IAN Setup** page allows you to configure other LAN parameters.

Password:

Clicking on the **Password** hyperlink, the **Password** page allows you to change your passwords for better security.

DSL Settings:

Clicking on the **DSL Settings** hyperlink, the **DSL Settings** page allows you to configure the DSL settings that you will apply to your router.

Reboot:

Clicking on the **Reboot** hyperlink, the page on the right serves an important function so that changes made to the settings become effective. Clicking Save/Reboot does this.

The **Restore Default Settings** feature built into the Compex MRI21E allows you to return all the settings of the device to their original values. Please note that any customization/changes you have made will then be erased.

4.2 WAN CONFIGURATION BASIC SETUP

The Compex MRI21E has been pre-configured based on the **VCI/VPI** table below:

Link Name	VPI	VCI
pvc_0_32	0	32
pvc_8_35	8	35
pvc_0_35	0	35
pvc_8_81	8	81

The default WAN connection type mode is bridge encapsulation. For the bridge mode, there is no need to configure more parameters. However, the third party dial-up software is needed for connection with the Internet.

Compex MRI21E supports 5 protocols: PPPoA, PPPoE, MER, IPoA and Bridging.

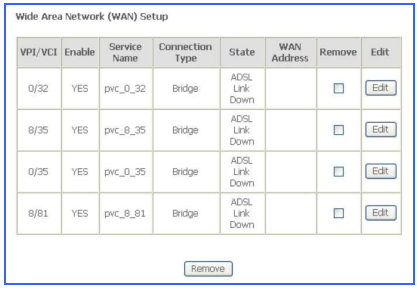
Your ISP should provide you with the following information to allow you to correctly configure your Internet connection:

- VPI/VCI
- WAN connection type
- Encapsulation mode
- Authentication Method (for PPPoE/PPPoA)

Follow the common steps described in Section 4.2.1 below to select your Internet connection type. Then move on to Section 4.2.2 for Bridging WAN type, to Section 4.2.3 for PPPoE WAN type, and then to Section 4.2.4 for MER WAN type.

4.2.1 Using the Configuration Guide

1. Click on the **WAN** hyperlink on the left side of the browser. The **Wide Area Network (WAN) Setup** page lets you define a maximum of four connections in the table list. To set up a connection with your Internet account settings, select any of the existing 4 connections and click on **Edit**.



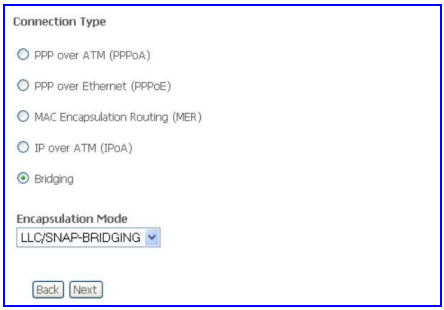
2. To edit the selected connection, click on the corresponding **Edit** button under the **Edit** column. Then the ATM PVC Setup page appears, displaying the **VPI** and **VCI** fields. You can edit these values to set those provided by your ISP. After that, click **Next**.

3. The **Connection Type** page appears showing you the five options to select. The default connection type is Bridging.

Note: Some connection lines need you to select either LLC or VC as the encapsulation mode. Please contact your ISP in case of doubts.

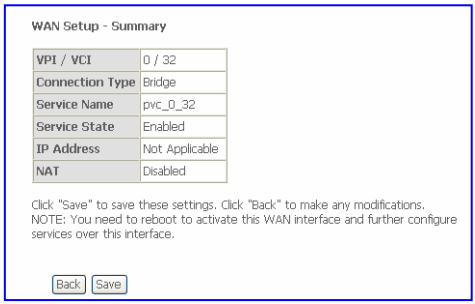
4.2.2 Selecting RFC1483 Bridging for Connection Type

1. In the **Connection Type** page, select the **Bridging** mode and the **Encapsulation Mode**. To proceed, click **Next**.



2. Specify the **Service Name**, and select the **Enable Service**. Then click **Next** to proceed with the WAN configuration.

3. If you need to modify the required parameter, click **Back** to edit it. Otherwise, click **Save** to save the configuration.

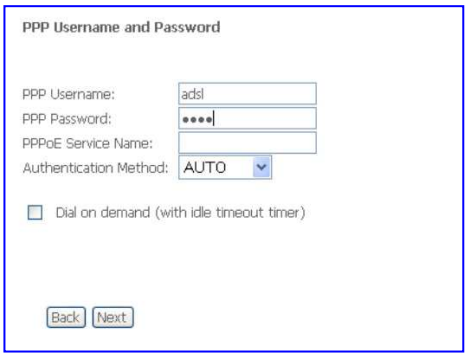

WAN Setup - Summary
VPI / VCI 0 / 32
Connection Type Bridge
Service Name pvc_0_32
Service State Enabled
IP Address Not Applicable
NAT Disabled
Click "Save" to save these settings. Click "Back" to make any modifications.
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.
Back
Save

4.2.3 Selecting PPPoE or PPPoA for Connection Type

PPPoE is also known as RFC 2516. It is a method of encapsulating PPP packets over Ethernet. PPPoA (also known as RFC2364) refers to Peer-to-Peer Protocol over ATM. Similarly to PPPoE, it also makes use of PPP but it is based on ATM protocol. The setup procedure for PPPoE and PPPoA is similar. So we will introduce only PPPoE in the example below:

1. In the **Connection Type** page, click the radio button next to **PPP over Ethernet (PPPoE)** and select the **Encapsulation Mode** recommended by your ISP. Then click **Next**.

2. The **PPP Username and Password** page appears, showing the following parameters:



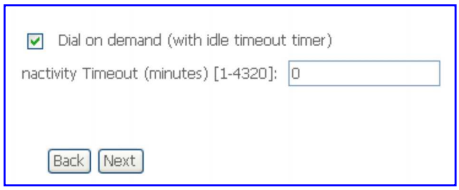
PPP Account:
Enter your Internet account user name.

Password:
This is your account password.

PPPoE Service Name:
This is the name of your ISP. (It is optional).

Authentication Mode:
Select the Authentication mode used by your ISP. The default mode is **AUTO**.

Tick the checkbox next to **Dial on demand (with idle timeout timer)**.



Dial on demand (with idle timeout timer):

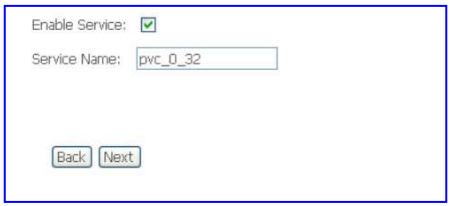
When this mode is selected, the Internet connection will be automatically disconnected if there is no Internet activity from the LAN within the assigned **Inactivity Timeout** (eg. 1 minute). The connection will be activated again when Internet requests are detected. This function is advantageous for users who are charged for the time spent online.

Inactivity Timeout:

If "Dial on demand" is selected, this input box appears to let you enter the maximum idle time after which the connection will deactivate in the absence of traffic. If the value is 0, you will always remain online.

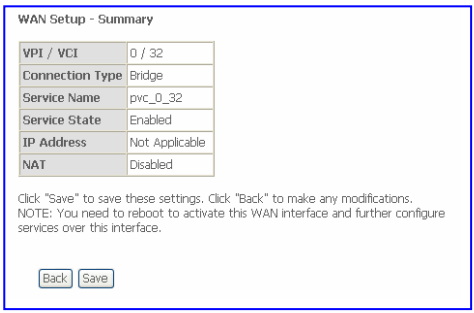
Then click **Next** to proceed.

4. Specify the **Service Name**, and select the **Enable Service**. Then click **Next** to proceed with the WAN configuration.



Take note that the PPPoE mode does not work unless you reboot the ADSL modem.

5. Click **Save** to save the configuration. If you need to modify the required parameter, click **Back** to edit it.


WAN Setup - Summary
VPI / VCI 0 / 32
Connection Type Bridge
Service Name pvc_0_32
Service State Enabled
IP Address Not Applicable
NAT Disabled
Click "Save" to save these settings. Click "Back" to make any modifications.
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.
Back
Save

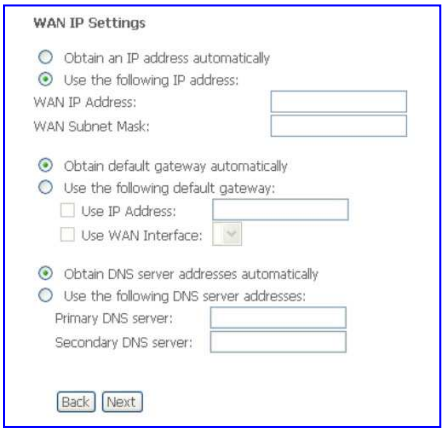
4.2.4 Selecting MER or IPoA for Connection Type

The setup procedure for MER and IPoA is similar. So we will introduce only MER in the example below:

1. In the **Connection Type** page, click the radio button next to the **MAC Encapsulation Routing (MER)** mode and select the correct **Encapsulation Mode**. To proceed, click **Next**.

2. The **WAN IP Settings** page is displayed. Enter the required parameters:
   (a). Select **Obtain an IP address automatically** if your ISP automatically assigns your IP address. If not, select **Use the following IP address:** to enter the **WAN IP Address** and the **WAN Subnet Mask** provided by your ISP.

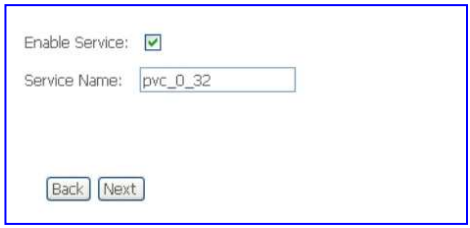
   (b). Select **Obtain default gateway automatically** if your ISP automatically issues the IP address of the gateway or select **Use the following default gateway:** to enter the IP address in the **Use IP Address** field and select a value from the **Use WAN Interface** dropdown list.



(c). Select **Obtain DNS server addresses automatically** if your ISP automatically issues your DNS Server IP address. Otherwise, select **Use the following DNS server addresses:** to enter the IP addresses of the **Primary DNS server** and of the **Secondary DNS server** provided by your ISP.

4. Once the configuration is finished, click **Next** to proceed.

5. Specify the **Service Name**, and select the **Enable Service**. Then click **Next** to proceed with the WAN configuration.



6. Click **Save** to save the configuration. If you need to modify the required parameter, click **Back** to edit it.

4.3 LAN CONFIGURATION BASIC SETUP

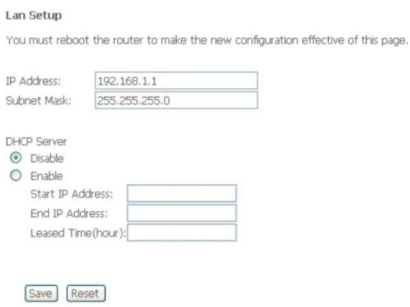
As a network device, ADSL Modem has its own IP address and MAC address. The Compex MRI21E is set to a default IP address of 192.168.1.1 and the default subnet mask of 255.255.255.0. The user can configure these addresses through the LAN configuration as shown below.

4.3.1 Configuring IP Address

1. Click **LAN** on the left side of the browser. The **LAN Setup** page will appear, prompting you to edit **IP Address** and **Subnet Mask**.

2. Then click **Save** to effect this configuration.

Please take note that if you change the IP Address, you must reboot the modem and use the new IP address to login.



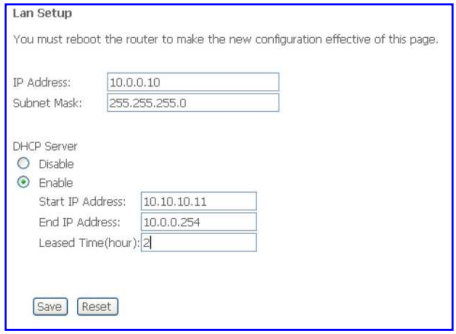
4.3.2 Configuring DHCP Setting

1. Click **LAN** on the left side of the browser. Then the **LAN Setup** page appears so that you can go to **DHCP Server**, and set the server to **Enable**.

2. Enter the range of IP addresses that can be assigned by the DHCP server in the **Start IP Address** and **End IP Address** fields. For example, from 10.10.10.11 to 10.10.10.254.

3. Next enter the number of hours during which the IP address assigned by the DHCP server will remain valid in the **Leased Time** field. For example, 2.

4. Then click **Save** to effect this configuration.



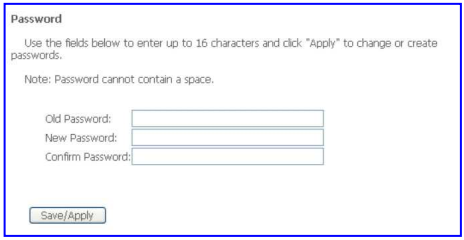
4.4 PASSWORD CONFIGURATION

When you configure the ADSL modem through an Internet browser, the system requires you to enter your username and password to validate your access permission. By default, the username is set to "**admin**" and the password to "**password**". The username remains unchanged.

4.4.1 Configuring Password

1. Click the **Password** hyperlink on the left side of the browser. Under the **Password** page, enter the old password and the new password (twice to confirm).

2. Then click **Save/Apply** to effect this configuration.


Password
Use the fields below to enter up to 16 characters and click "Apply" to change or create passwords.
Note: Password cannot contain a space.
Old Password:
New Password:
Confirm Password:
Save/Apply

Please remember the password after you have changed it otherwise you will not be able to access the web interface menu.

CHAPTER 5: ADVANCED CONFIGURATION

5.1 DETAILED CONFIGURATION

This part of the setup for the Compex MRI21E is meant for the advanced user who requires more than the essential information to set up a wired/wireless network infrastructure. Adopting a top-down approach to explain the features found on the modem router, what follows is a detailed walkthrough of the configurable settings available within the web-based administration menu:
Note that we will illustrate using the default settings of the Compex MRI21E.

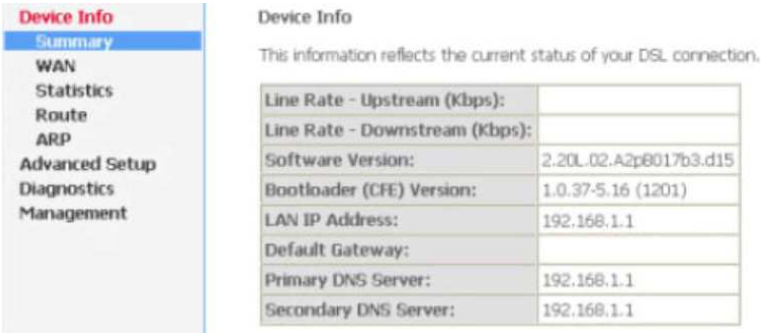
5.1.1 Advanced Setup

Open the browser and key in **http://192.168.1.1/main.html** at the address bar of the Internet browser.

The **Connect to 192.168.1.1** window appears. Key in **admin** for the user name and **password** for the password. Both must be case-sensitive. Then click **OK**.

Please remember the password after you have changed it otherwise you will not be able to access the web interface menu.

After logging in, you will be greeted by the web-based configuration menu page below:



However, if you have set PPPoE as the WAN connection type, and enabled NAT, you will see that a different configuration menu page appears with NAT and its additional features as shown below:

Device Info
Advanced Setup
WAN
LAN
NAT
Virtual Servers
Port Triggering
DMZ Host
Security
Routing
DNS
DSL
Diagnostics
Management
NAT -- Virtual Servers Setup
Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum 32 entries can be configured.
Add
Remove
Server Name
External Port Start
External Port End
Protocol
Internal Port Start
Internal Port End
Server IP Address
Remove

5.2 VIRTUAL SERVERS

Virtual Server allows you to direct incoming traffic from the WAN side (identified by Protocol and External port) to an Internal PC with a private IP address on the LAN. You are not required to specify the Internal port unless the external port needs to be converted to a different port number used by the server on the LAN. A maximum of 32 NAT virtual server entries can be configured.

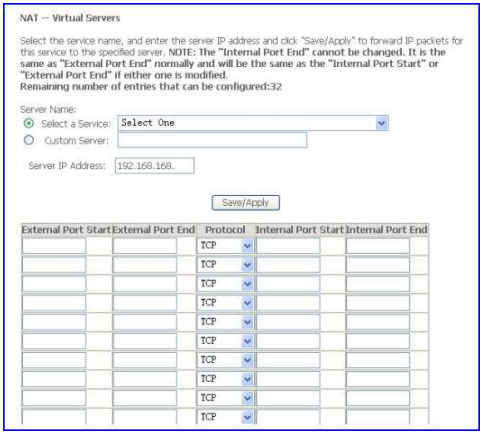
5.2.1 Setting up Virtual Servers

1. Click the **NAT** hyperlink on the left side of the browser to select **Virtual Servers**. Then the **NAT-Virtual Servers Setup** page shows up.

NAT -- Virtual Servers Setup
Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum 32 entries can be configured.
Add
Remove
Server Name
External Port Start
External Port End
Protocol
Internal Port Start
Internal Port End
Server IP Address
Remove

2. To set up a new virtual server, click **Add**. In the **NAT-Virtual Servers** page, you can set up a Virtual Server for a Known Server type by selecting a service from the drop-down menu OR you can define a **Custom Server**.

3. As an example, if you want to set up a web server on a PC with IAN IP address of 192.168.1.55, select HTTP as **service** and enter **192.168.1.55** as the **server IP Address**. Otherwise if the service you want to set up is not available from the **Select a Service** dropdown list, you can define your own virtual server thus:


NAT -- Virtual Servers
Select the service name, and enter the server IP address and click "Save/Apply" to forward IP packets for this service to the specified server. NOTE: The "Internal Port End" cannot be changed. It is the same as "External Port End" normally and will be the same as the "Internal Port Start" or "External Port End" if either one is modified.
Remaining number of entries that can be configured:32
Server Name:
Select a Service:
Select One
Custom Server:
Server IP Address:
192.168.168.
Save/Apply
External Port Start
External Port End
Protocol
Internal Port Start
Internal Port End
TCP

Custom Server:
Define a name for the server type you wish to configure.

Server IP Address:
Key in the LAN IP address of the PC you wish to set up as virtual server.

External Port Start *and* ***External Port End:***
Specify the port/the range of port numbers used by this service

Protocol:
Select from the drop-down list whether you are using TCP or UDP protocol type.

Internal Port Start *and* ***Internal Port End:***
Key in the relevant value(s) if the external port/range of ports needs to be converted to a different port number/range of port numbers before being forwarded to the LAN server.

4. Click on the **Save/Apply** button.

5. To delete a virtual server entry, use **Remove** to delete the corresponding virtual server entry from the table list.

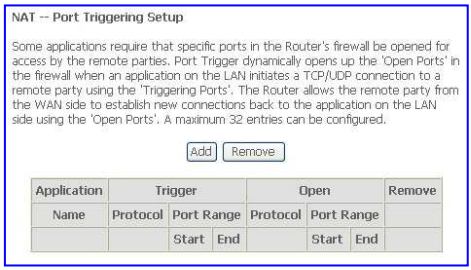
5.3 PORT TRIGGERING

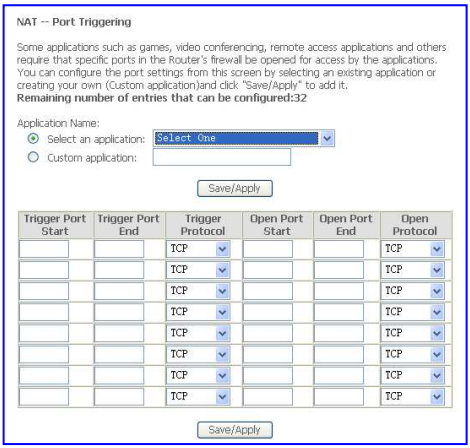
Some applications require that the remote parties open specific ports in the Compex MRI21E's firewall for access. For instance, assuming an application uses port 25 for requests and port 113 for replies. If a PC on the LAN connects to port 25 on a remote server hosting this application, using port triggering on the Compex MRI21E, incoming connections to port 113 (from the remote server) could be redirected to the PC that initiated the request. A maximum of 32 port-triggering entries can be configured.

5.3.1 Setting up Port Triggering

1. Click the **NAT** hyperlink on the left side of the browser to select **Port Triggering**. Then the **NAT-Port Triggering Setup** page shows up.

2. To set up a new port, click **Add**. In the NAT-Port Triggering page, you can set up a port triggering entry for a known application type by selecting an application from the dropdown menu OR you can define a custom application thus:


NAT -- Port Triggering Setup
Some applications require that specific ports in the Router's firewall be opened for access by the remote parties. Port Trigger dynamically opens up the 'Open Ports' in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote party using the 'Triggering Ports'. The Router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the 'Open Ports'. A maximum 32 entries can be configured.
Add
Remove
Application Name
Trigger
Open
Remove
Protocol
Port Range
Start
End


NAT -- Port Triggering
Some applications such as games, video conferencing, remote access applications and others require that specific ports in the Router's firewall be opened for access by the applications. You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application)and click "Save/Apply" to add it.
Remaining number of entries that can be configured:32
Application Name:
Select an application:
Select One
Custom application:
Save/Apply
Trigger Port Start
Trigger Port End
Trigger Protocol
Open Port Start
Open Port End
Open Protocol
TCP
Save/Apply

Custom Application:
Define the name of the application for which you wish to configure port triggering.

Trigger Port Start *and* ***Trigger Port End:***
Define the port/range of ports for the outgoing connections that will cause the trigger.

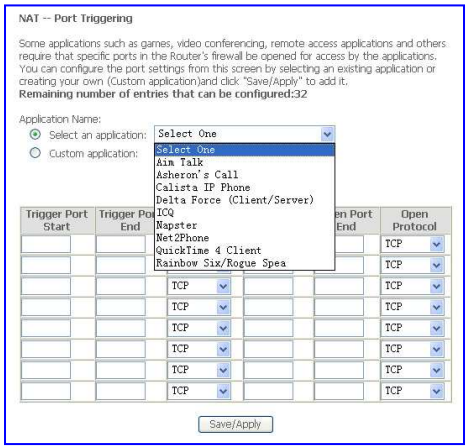
Trigger Protocol:
Define the protocol type for the trigger port.

Open Port Start: *and* ***Open Port End:***
Define the port/range of ports to be left open for the incoming connections , in reply to the trigger.

Open Protocol:
Define the protocol type for the open port.

3. Then click **Save/Apply** to save your changes.

4. This **Remove** button is used to delete the port triggering entry from the table list.


NAT -- Port Triggering
Some applications such as games, video conferencing, remote access applications and others require that specific ports in the Router's firewall be opened for access by the applications. You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application)and click "Save/Apply" to add it.
Remaining number of entries that can be configured:32
Application Name:
Select an application:
Select One
Custom application:
Select One
Aim Talk
Asheron's Call
Calista IP Phone
Delta Force (Client/Server)
ICQ
Napster
Net2Phone
QuickTime 4 Client
Rainbow Six/Rogue Spea
Trigger Port Start
Trigger Port End
Open Port End
Open Protocol
TCP
Save/Apply

5.4 DMZ HOST

The Compex MRL21E will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.

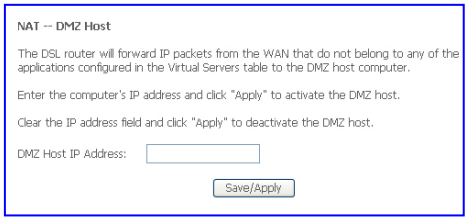
5.4.1 Setting up a DMZ Host

1. Click the **NAT** hyperlink on the left side of the browser to select **DMZ Host**. Then the **NAT-DMZ Host Setup** page shows up displaying the blank **DMZ Host IP Address**.

2. Enter the LAN IP address of the PC you wish to set as DMZ host.

3. Click **Save/Apply**.

If you need to disable the DMZ host, just clear the **DMZ Host IP Address** field, followed by clicking **Save/Apply**.


NAT -- DMZ Host
The DSL router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.
Enter the computer's IP address and click "Apply" to activate the DMZ host.
Clear the IP address field and click "Apply" to deactivate the DMZ host.
DMZ Host IP Address:
Save/Apply

Note: DMZ allows the host to expose all its ports to the Internet. The DMZ host is thus vulnerable to malicious attacks from the Internet.

5.5 IP FILTERING

The Compex MRI21E supports IP Filtering , which allows you to easily set up rules to control incoming and outgoing Internet traffic. The MRI21E provides two types of IP filtering:

- **Outgoing IP Filtering:**

By default, Compex MRI21E allows all outgoing Internet traffic from the LAN but by setting up **Outgoing IP Filtering** rules, you can block some users and/or applications from accessing the Internet.

- **Incoming IP Filtering:**

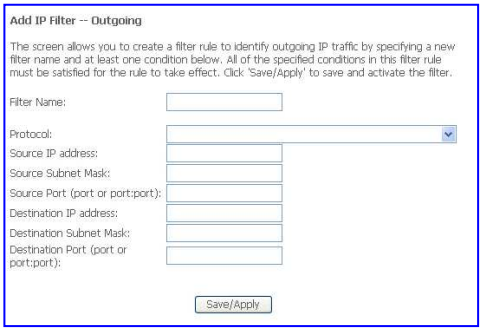
By default, when NAT is enabled, all incoming IP traffic from WAN is blocked except for responses to requests from the LAN. However, some incoming traffic from the Internet can be accepted by setting up **Incoming IP Filtering** rules.

5.5.1 Configuring an Outgoing IP Filtering Rule

1. Click the **Security** hyperlink on the left side of the browser to select **IP Filtering** and then **Outgoing**. Then the **Outgoing IP Filtering Setup** page shows up.

Outgoing IP Filtering Setup
By default, all outgoing IP traffic from LAN is allowed, but some IP traffic can be BLOCKED by setting up filters.
Choose Add or Remove to configure outgoing IP filters.
Filter Name
Protocol
Source Address / Mask
Source Port
Dest. Address / Mask
Dest. Port
Remove
Add
Remove

2. To create a new outgoing IP filter, click **Add**. The **Add IP Filter-Outgoing** page is displayed. Key in the following parameters:


Add IP Filter -- Outgoing
The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the filter.
Filter Name:
Protocol:
Source IP address:
Source Subnet Mask:
Source Port (port or port:port):
Destination IP address:
Destination Subnet Mask:
Destination Port (port or port:port):
Save/Apply

Filter Name:
Key in the name of the filter rule.

Protocol:
Select the IP protocol to block.

Source Address/Mask:
Enter the IP address of the PC on the LAN to block.

Source Port:
Enter the port number used by the application to block.

Destination Address/Mask:
Enter the IP address of the remote server to which connection should be blocked.

Destination Port:
Enter the destination port number used by the application to block.

3. Click **Save/Apply** to save this rule. The new rule will then be displayed in the **Outgoing IP Filtering** table list.

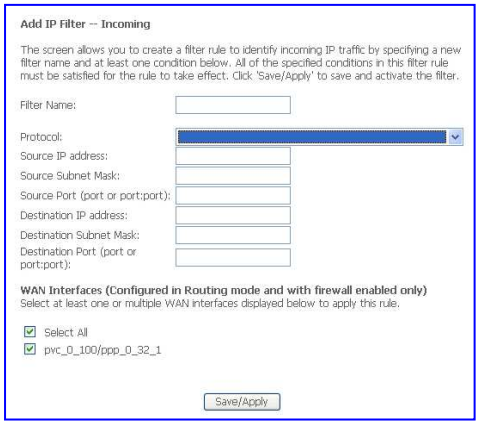
4. To delete the rule, click the **Remove** checkbox next to the selected rule, and click **Remove**.

5.5.2 Configuring an Incoming IP Filtering Rule

1. Click the **Security** hyperlink on the left side of the browser to select **IP Filtering** and then **Incoming**. Then the **Incoming IP Filtering Setup** page shows up.

Incoming IP Filtering Setup
By default, all incoming IP traffic from the WAN is blocked when the firewall is enabled.
However, some IP traffic can be ACCEPTED by setting up filters.
Choose Add or Remove to configure incoming IP filters.
Filter Name
VPI/VCI
Protocol
Source Address / Mask
Source Port
Dest. Address / Mask
Dest. Port
Remove
Add
Remove

2. To create a new incoming IP filter, click **Add**. The **Add IP Filter-Incoming** page is displayed. Enter the required parameters.


Add IP Filter -- Incoming
The screen allows you to create a filter rule to identify incoming IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the filter.
Filter Name:
Protocol:
Source IP address:
Source Subnet Mask:
Source Port (port or port:port):
Destination IP address:
Destination Subnet Mask:
Destination Port (port or port:port):
WAN Interfaces (Configured in Routing mode and with firewall enabled only)
Select at least one or multiple WAN interfaces displayed below to apply this rule.
Select All
pvc_0_100/ppp_0_32_1
Save/Apply

Filter Name:
Key in the name of the filter rule.

Protocol:
Select the IP protocol to allow.

Source Address/Mask:
Enter the IP address of the remote server from which to allow connection.

Source Port:
Enter the port number used by the application to allow.

Destination Address/Mask:
Enter the IP address of the PC on the LAN to which connection is allowed.

Destination Port:
Enter the destination port number used by the application to allow

3. Click **Save/Apply** to save this rule. The new rule will then be displayed in the **Incoming IP Filtering** table list.

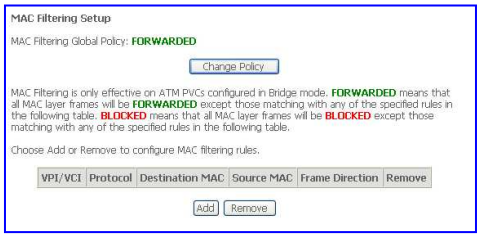
4. To delete the rule, click the **Remove** checkbox next to the selected rule, and click **Remove**.

5.6 MAC FILTERING

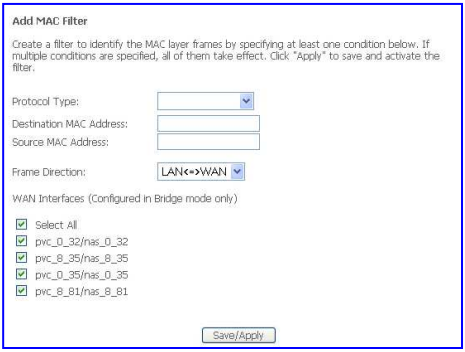
MAC Filtering acts as a security measure by controlling the users who can access the network. Adding the user's MAC address to the MAC filter listing can easily do this. You can then choose whether the users in the list are allowed to access to the network or not by clicking on the **Change Policy** button and selecting **BLOCKED** or **FORWARDED** respectively.

5.6.1 Configuring a MAC Filtering Rule

1. Click the **Security** hyperlink on the left side of the browser to select **MAC Filtering**. Then the **MAC Filtering Setup** page shows up.


MAC Filtering Setup
MAC Filtering Global Policy: FORWARDED
Change Policy
MAC Filtering is only effective on ATM PVCs configured in Bridge mode. FORWARDED means that all MAC layer frames will be FORWARDED except those matching with any of the specified rules in the following table. BLOCKED means that all MAC layer frames will be BLOCKED except those matching with any of the specified rules in the following table.
Choose Add or Remove to configure MAC filtering rules.
VPI/VCI
Protocol
Destination MAC
Source MAC
Frame Direction
Remove
Add
Remove

2. To create a new MAC filter rule, click **Add**. The key settings are entered:


Add MAC Filter
Create a filter to identify the MAC layer frames by specifying at least one condition below. If multiple conditions are specified, all of them take effect. Click "Apply" to save and activate the filter.
Protocol Type:
Destination MAC Address:
Source MAC Address:
Frame Direction:
LAN<=>WAN
WAN Interfaces (Configured in Bridge mode only)
Select All
pvc_0_32/nas_0_32
pvc_8_35/nas_8_35
pvc_0_35/nas_0_35
pvc_8_81/nas_8_81
Save/Apply

The key settings for adding a new MAC filter are explained:

Option	Description
***Protocol Type*:**	It is the identifier for the protocol family. The protocol type is required to translate the modem's IP address to its MAC address. There are several types of protocol to select from: • **Apple Talk:** Developed by Apple Computer in the 1980, Apple Talk's purpose was to allow multiple users to share resources such as files and printers. AppleTalk is a multi-layered protocol for Apple Computers providing internetwork routing, transaction and data stream service, naming service, and comprehensive file and print sharing among Apple systems using the LocalTalk interface built into the Apple hardware. AppleTalk ports communicate with other network media such as Ethernet by the use of LocalTalk to Ethernet bridges or by Ethernet add-in boards for Apple machines. Many third-party applications exist for the AppleTalk protocols. • **PPPoE:** PPP over Ethernet (PPPoE) provides the ability to connect a network of hosts over a simple bridging access device to a remote Access Concentrator. With this model, each host utilizes its own PPP stack and the user is presented with a familiar user interface. Access control, billing and type of service can be done on a per-user, rather than a per-site, basis. To provide a point-to-point connection over Ethernet, each PPP session must learn the Ethernet address of the remote peer, as well as establish a unique session identifier. PPPoE includes a discovery protocol that provides this.

	PPPoE has two distinct stages. There is a Discovery stage and a PPP Session stage. When a Host wishes to initiate a PPPoE session, it must first perform Discovery to identify the Ethernet MAC address of the peer and establish a PPPoE SESSION_ID. While PPP defines a peer-to-peer relationship, Discovery is inherently a client-server relationship. In the Discovery process, a Host (the client) discovers an Access Concentrator (the server). Based on the network topology, there may be more than one Access Concentrator that the Host can communicate with. The Discovery stage allows the Host to discover all Access Concentrators and then select one. When Discovery completes successfully, both the Host and the selected Access Concentrator have the information they will use to build their point-to-point connection over Ethernet. The Discovery stage remains stateless until a PPP session is established. Once a PPP session is established, both the Host and the Access Concentrator MUST allocate the resources for a PPP virtual interface. • **IPv4:** The Internet Protocol (IP) is a network-layer (Layer 3) protocol in the OSI model that contains addressing information and some control information to enable packets being routed in network. IP is the primary network-layer protocol in the TCP/IP protocol suite. Along with the Transmission Control Protocol (TCP), IP represents the heart of the Internet protocols. IP is equally well suited for both LAN and WAN communications. IP (Internet Protocol) has two primary responsibilities: providing connectionless, best-effort delivery of datagrams

	through a network; and providing fragmentation and reassembly of datagrams to support data links with different maximum-transmission unit (MTU) sizes. The IP addressing scheme is integral to the process of routing IP datagrams through an internetwork. Each IP address has specific components and follows a basic format. These IP addresses can be subdivided and used to create addresses for sub networks. Each computer (known as host) on a TCP/IP network is assigned a unique logical address (32-bit in IPv4) that is divided into two main parts: the network number and the host number. The network number identifies a network and must be assigned by the Internet Network Information Center (InterNIC) if the network is to be part of the Internet. An Internet Service Provider (ISP) can obtain blocks of network addresses from the InterNIC and can itself assign address space as necessary. The host number identifies a host on a network and is assigned by the local network administrator. When you send or receive data (for example, an e-mail note or a Web page), the message gets divided into little chunks called packets. Each of these packets contains both the sender's Internet address and the receiver's address. Because a message is divided into a number of packets, a different route can if necessary, send each packet across the Internet. Packets can arrive in a different order than the order they were sent in. The Internet Protocol just delivers them. It's up to another protocol, the Transmission Control Protocol (TCP) to put them back in the right order. All other protocols within the TCP/IP suite, except ARP and RARP, use IP to route frames from host to host.

- **IPv6:**

IPv6 is the new version of Internet Protocol (IP) based on IPv4, a network-layer (Layer 3) protocol that contains addressing information and some control information enabling packets to be routed in the network.

There are two basic IP versions: IPv4 and IPv6. IPv6 is also called next generation IP or IPng. IPv4 and IPv6 are de-multiplexed at the media layer. For example, IPv6 packets are carried over Ethernet with the content type 86DD (hexadecimal) instead of IPv4's 0800. The IPv4 is described in separate documents. This document describes the IPv6 details.

IPv6 increases the IP address size from 32 bits to 128 bits, to support more levels of addressing hierarchy, a much greater number of addressable nodes, and simpler auto-configuration of addresses. IPv6 addresses are expressed in hexadecimal format (base 16) that allows not only numerals (0-9) but a few characters as well (a-f). A sample IPv6 address looks like: 3ffe:ffff:100:f101:210:a4ff:fee3:9566. Scalability of multicast addresses is introduced. A new type of address called an anycast address is also defined, to send a packet to any one of a group of nodes.

Two major improvements in IPv6 vs. v4:

- Improved support for extensions and options - IPv6 options are placed in separate headers that are located between the IPv6 header and the transport layer header. Changes in the way IP header options are encoded to allow more efficient forwarding, less

	stringent limits on the length of options, and greater flexibility for introducing new options in the future. • Flow labeling capability - A new capability has been added to enable the labeling of packets belonging to particular traffic flows for which the sender requests special handling, such as non-default Quality of Service or real-time service. **IPX:** It stands for **I**nternetwork **P**acket **Ex**change. It is a protocol used by Novell Netware. Internetwork Packet Exchange (IPX) is a legacy network protocol used by the Novell NetWare operating systems to route packets through an internetwork. IPX is a datagram protocol used for connectionless communications – similar to IP (Internet Protocol) in the TCP/IP suite. Higher-level protocols, such as SPX and NCP, are used for additional error recovery services. To make best-path routing decisions, IPX uses the services of a dynamic distance vector routing protocol such as Routing Information Protocol [RIP]) or NetWare Link-State Protocol [NLSP]). Novell IPX network addresses are unique and are represented in hexadecimal format that consist of two parts: a network number and a node number. The IPX network number, which is assigned by the network administrator, is 32 bits long. The node number, which usually is the Media Access Control (MAC) address for one of the system's network interface cards (NICs), is 48 bits long. IPX's use of a MAC address for the node number enables the system to send nodes to predict what MAC

address to use on a data link.

- **NetBEUI:**

It stands for **Net**BIOS **E**xtended **U**ser **I**nterface. It is a new, extended version of NetBIOS, the program that lets computers communicate within a local area network. NetBEUI formalizes the frame format (or arrangement of information in a data transmission) that was not specified as part of NetBIOS. NetBEUI was developed by IBM for its LAN Manager product and has been adopted by Microsoft for its Windows NT, LAN Manager, and Windows for Workgroups products. Hewlett-Packard and DEC use it in comparable products.

NetBEUI is the best performance choice for communication within a single LAN. Because, like NetBIOS, it does not support the routing of messages to other networks, its interface must be adapted to other protocols such as Internetwork Packet Exchange or TCP/IP. A recommended method is to install both NetBEUI and TCP/IP in each computer and set the server up to use NetBEUI for communication within the LAN and TCP/IP

- **IGMP:**

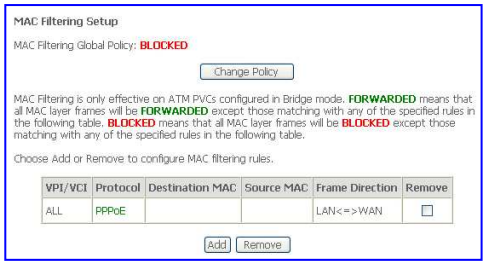
It stands for **I**nternet **G**roup **M**anagement **P**rotocol. It is the Internet protocol that provides a way for an Internet computer to report its multicasting group membership to adjacent routers. Multicasting allows one computer on the Internet to send content to multiple other computers that have identified themselves as interested in receiving the originating computer's content. Multicasting can be used for such applications as updating the address books of

	mobile computer users in the field, sending out company newsletters to a distribution list, and "broadcasting" high-bandwidth programs of streaming media to an audience that has "tuned in" by setting up a multicast group membership.
Destination MAC Address:	Enter the MAC address of the destination computer which acts as a receiver (if any).
Source MAC Address:	Enter the MAC address of the source computer which acts as the transmitting device (if any).
Frame Direction:	Select the frame direction affected by the MAC filter rule. Three available options are: • **WAN<=>LAN** This refers to the frames exchanged between the WAN and LAN in both directions. • **WAN=> IAN** This refers to the frames directed from the WAN to the LAN. • **IAN => WAN** This refers to the frames directed from the LAN to the WAN.

3. Click **Save/Apply** to save this setting. Then you will see the new filter rule appear in the table list.

4. To remove the filter rule, click the **Remove** checkbox next to the selected rule in the table list. Then click **Remove**. The filter rule will be deleted from the table list.

5. If you wish to change the MAC filtering policy, click **Change Policy**.


MAC Filtering Setup
MAC Filtering Global Policy: BLOCKED
Change Policy
MAC Filtering is only effective on ATM PVCs configured in Bridge mode. FORWARDED means that all MAC layer frames will be FORWARDED except those matching with any of the specified rules in the following table. BLOCKED means that all MAC layer frames will be BLOCKED except those matching with any of the specified rules in the following table.
Choose Add or Remove to configure MAC filtering rules.
VPI/VCI
Protocol
Destination MAC
Source MAC
Frame Direction
Remove
ALL
PPPoE
LAN<=>WAN
Add
Remove

Change MAC Filtering Global Policy
WARNING: Changing from one global policy to another will cause all defined rules to be REMOVED AUTOMATICALLY! You will need to create new rules for the new policy.
Are you sure you want to change MAC Filtering Global Policy from FORWARDED to BLOCKED ?
NO
YES

5.7 PARENTAL CONTROL

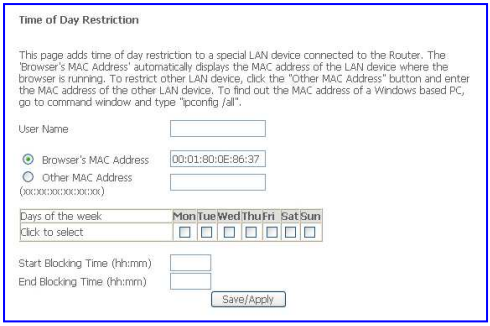
The Parental Control helps control the children's Internet usage by allowing Internet access only during certain days or at certain times.

5.7.1 Setting up a Parental Control Rule

1. Click the **Security** hyperlink on the left side of the browser to select **Parental Control**. Then the corresponding page shows up displaying the calendar table.

Time of Day Restrictions -- A maximum 16 entries can be configured.
Username MAC Mon Tue Wed Thu Fri Sat Sun Start Stop Remove
Add Remove

2. To create a new schedule, click **Add**.


Time of Day Restriction
This page adds time of day restriction to a special LAN device connected to the Router. The 'Browser's MAC Address' automatically displays the MAC address of the LAN device where the browser is running. To restrict other LAN device, click the "Other MAC Address" button and enter the MAC address of the other LAN device. To find out the MAC address of a Windows based PC, go to command window and type "ipconfig /all".
User Name
Browser's MAC Address 00:01:80:0E:86:37
Other MAC Address
(xx:xx:xx:xx:xx:xx)
Days of the week Mon Tue Wed Thu Fri Sat Sun
Click to select
Start Blocking Time (hh:mm)
End Blocking Time (hh:mm)
Save/Apply

The key settings for adding a new Parental Control rule are explained:

Option	Description
User Name:	Enter your user name for the newly created parental control rule.
Browser's MAC Address:	The MAC address of the PC you are using will be automatically displayed.
Other MAC Address:	Enter the MAC address of the other PC in your LAN for which you want to restrict Internet access.
Days of the week ***Click to select***	This feature allows you to select one or more days on which your rule should apply.
Start Blocking Time: and ***End Blocking Time:***	The start and end blocking times give parents the tool they need to control the times of day their children use Internet and the amount of time they spend online.

3. Click **Save/Apply** to save this setting. Then you will see the new rule appear in the table list. To delete the rule, tick the **Remove** checkbox of the selected rule, and then click **Remove**. The rule will be deleted from the table list.

5.8 ROUTING

This section illustrates the following 3 features:

- Setting up a default gateway
- Configuring static routes
- Setting up RIP for NAT-enabled router

5.8.1 Setting up a Default Gateway

1. Click the **Routing** hyperlink on the left side of the browser to select **Default Gateway**. Then the **Routing-Default Gateway** page shows up displaying the **Enable Automatic Assigned Default Gateway** checkbox that is ticked by default.

Device Info
Advanced Setup
WAN
LAN
Security
Routing
Default Gateway
Static Route
DSL
Diagnostics
Management
Routing -- Default Gateway
If Enable Automatic Assigned Default Gateway checkbox is selected, this router will accept the first received default gateway assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC (s). If the checkbox is not selected, enter the static default gateway AND/OR a WAN interface. Click 'Save/Apply' button to save it.
NOTE: If changing the Automatic Assigned Default Gateway from unselected to selected, You must reboot the router to get the automatic assigned default gateway.
Enable Automatic Assigned Default Gateway
Save/Apply

2. If you do not wish to use the automatically assigned default gateway, disable the checkbox.

3. Click **Save/Apply** to effect this setting.

Note: If you want to select "**Enable Automatic Assigned Default Gateway**", you will have to reboot the MRL21E.

If your LAN consists of multiple subnets and you want to manually define the data transmitting paths:

5.8.2 Setting up a Static Route

1. Click the **Routing** hyperlink on the left side of the browser to select **Static Route**. Then the **Routing-Static Route** page shows up.

2. To create a new static route, click **Add**. The **Routing-Static Route Add** page shows up.

Routing -- Static Route Add
Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click "Save/Apply" to add the entry to the routing table.
Destination Network Address:
Subnet Mask:
Use Gateway IP Address
Use Interface
Save/Apply

The key settings for adding a new Static Route are explained:

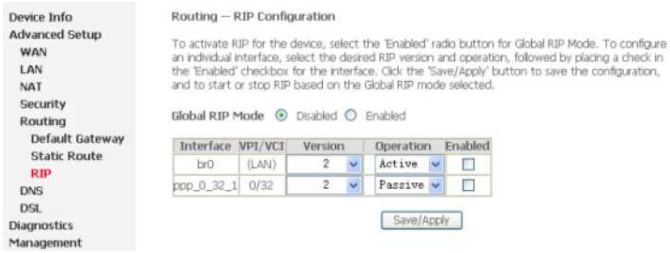
Option	Description
Destination Network Address:	Enter the network address to which the data packets are to be sent.
Subnet Mask:	Enter the subnet mask for this destination.
Use Gateway IP Address:	If you wish to use a specific gateway to reach the destination network, select this checkbox and then enter the IP address of the gateway.
Use Interface:	If you wish to use a particular WAN interface, select the checkbox and select the interface.

3. Click **Save/Apply** to effect this setting. The new entry will be added to the routing table list. To delete the entry from the routing table list, click on its corresponding **Remove** button.

5.8.3 Configuring RIP

RIP (Router Information Protocol) is dynamic routing protocol that allows Compex MRL21E to exchange routing information with other routers to determine optimal paths.

1. Click the **Routing** hyperlink on the left side of the browser to select **RIP**. Then the **Routing-RIP Configuration** page shows up.


Device Info
Advanced Setup
WAN
LAN
NAT
Security
Routing
Default Gateway
Static Route
RIP
DNS
DSL
Diagnostics
Management
Routing -- RIP Configuration
To activate RIP for the device, select the 'Enabled' radio button for Global RIP Mode. To configure an individual interface, select the desired RIP version and operation, followed by placing a check in the 'Enabled' checkbox for the interface. Click the 'Save/Apply' button to save the configuration, and to start or stop RIP based on the Global RIP mode selected.
Global RIP Mode Disabled Enabled
Interface VPI/VCI Version Operation Enabled
br0 (LAN) 2 Active
ppp_0_32_1 0/32 2 Passive
Save/Apply

2. Select the interface, eg. **ppp_0_32_1** to be enabled. Tick its corresponding **Enabled** checkbox. If you want the Compex MRL21E to transmit and receive information with other routers, select **Active**.

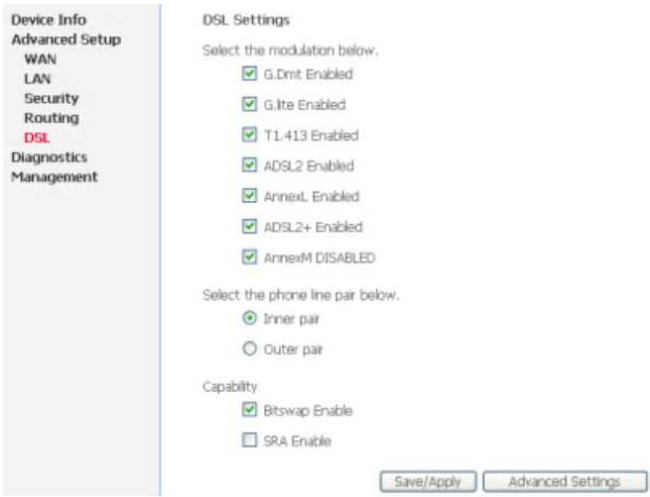
   In **Passive** mode, the Compex MRL21E will only receive information from other routers. Next select which **Version** to use. The RIP version controls the format and the broadcasting method of the RIP packets that Compex MRL21E sends. Most networks universally support **Version 1** whereas **Version 2** carries more information, which involves subnet broadcasting and multicasting.

3. Click **Save/Apply** to save your changes.

5.9 USING DSL

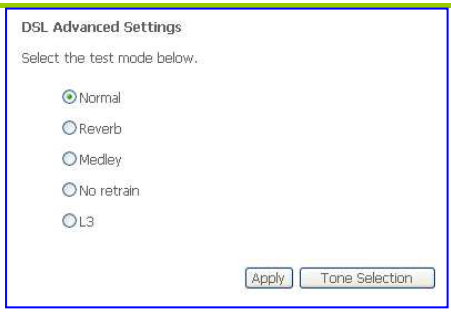
5.9.1 Configuring DSL

1. Click the **DSL** hyperlink on the left side of the browser. Then the **DSL Settings** page shows up.

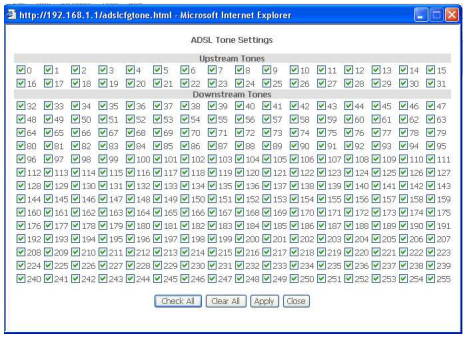


2. To configure the test mode, click **Advanced Settings**. The **DSL Advanced Settings** page shows up.

Note: These tones allow your ISP to perform DSL line testing. Running these tests may interfere with your DSL service.



3. To configure the tone for the selected mode, click **Tone Selection**. The **ADSL Tone Settings** page displays upstream and downstream tones that you can choose to clear or select. Then click **Apply** to effect the new tone settings. Otherwise click **Close** to abort the change.



4. Click **Save/Apply** to effect the change.

5.10 USING DNS

DNS (**D**omain **N**ame **S**ystem) is an Internet service that translates domain names into IP addresses. Because domain names are alphabetic, they are easier to remember. However, the Internet is based on IP addresses. Therefore, each time you type a domain name, a DNS service must translate the name into the corresponding IP address. For example, the domain name www.example.com might translate to *198.105.232.4*. The DNS system consists of a network of DNS servers. If one DNS server does not know how to translate a particular domain name, it asks another one and so on until the correct IP address is returned.

5.10.1 Configuring DNS Server

1. Under **DNS**, click the **DSL Server** hyperlink on the left side of the browser. Then the **DNS Server Configuration** page shows up.

Device Info
Advanced Setup
WAN
LAN
NAT
Security
Routing
DNS
DNS Server
Dynamic DNS
DSL
Diagnostics
Management
DNS Server Configuration
If 'Enable Automatic Assigned DNS' checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click 'Save' button to save the new configuration. You must reboot the router to make the new configuration effective.
Enable Automatic Assigned DNS
Primary DNS server:
Secondary DNS server:
Save

2. If you select the **Enable Automatic Assigned DNS** checkbox, the Compex MRI21E will receive and use the DNS Server assigned by your ISP.

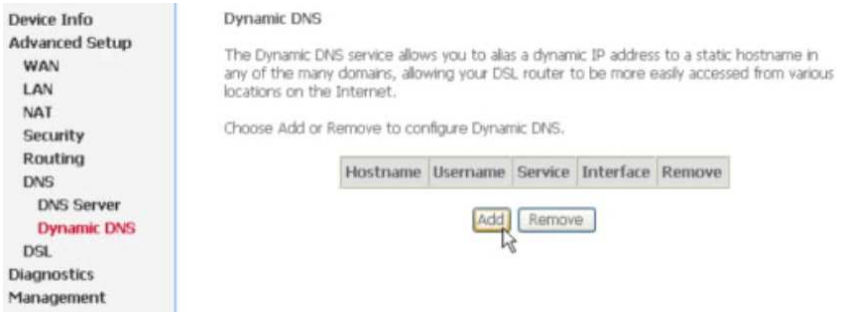
3. To use your preferred DNS servers, disable the **Enable Automatic Assigned DNS** checkbox and key in the IP address of your **Primary DSN server**. Adding a **Secondary DNS server** is optional.

4. Click **Save** to effect this setting.

If you are hosting virtual servers and have subscribed to a DDNS service, refer to the section below:

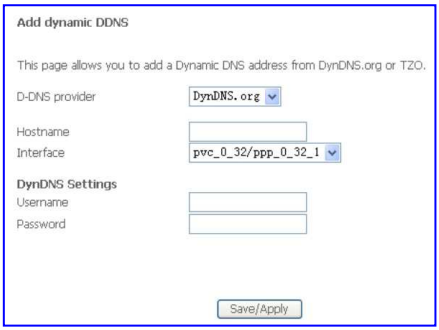
5.10.2 Configuring Dynamic DNS

1. Under **DNS**, click the **Dynamic DNS** hyperlink on the left side of the browser. Then the **Dynamic DNS** page shows up.



2. To configure a new Dynamic DNS, click **Add**. The **Add dynamic DDNS** page shows up.

3. Click **Save/Apply** after keying in your setting.

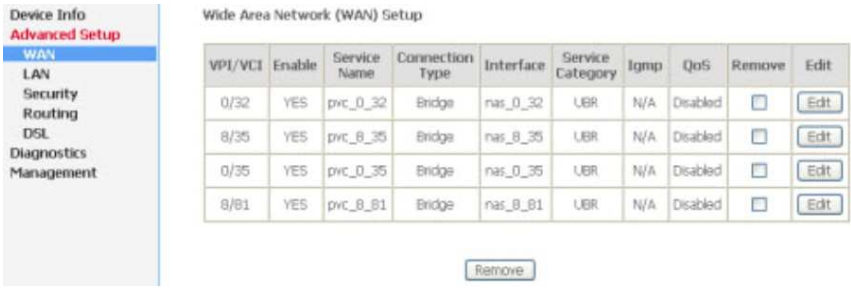


5.11 WAN CONFIGURATION ADVANCED SETUP

Referring to the section 4.2 WAN Configuration as discussed earlier, the advanced setup includes further details such as IGMP, QoS, etc.

5.11.1 Configuring WAN

1. Click the **WAN** hyperlink on the left side of the browser. Then the **Wide Area Network (WAN) Setup** page shows up.



2. To edit the required parameters, click **Edit** next to the selected connection in the table.

3. If you wish to remove the connection from the table list, tick the **Remove** checkbox next to the selected connection. Then click **Remove**.

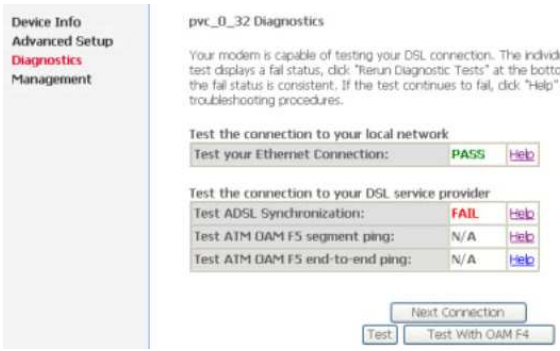
CHAPTER 6: DIAGNOSTICS

Compex MRL21E has a diagnostic feature to test your DSL connection. You can use the diagnostic menu to perform the following test functions from the modem router.

- Testing the connection to your local network
- Testing the connection to your DSL service provider.

6.1 PERFORMING DIAGNOSTIC TEST

1. Click the **Diagnostics** hyperlink on the left side of the browser to run tests on the WAN connection type you want to select. For example, **pvc_0_32** where you can see the **pvc_0_32 Diagnostics** page as shown below.


Device Info
Advanced Setup
Diagnostics
Management
pvc_0_32 Diagnostics
Your modem is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Rerun Diagnostic Tests" at the bottom of this page to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.
Test the connection to your local network
Test your Ethernet Connection: PASS Help
Test the connection to your DSL service provider
Test ADSL Synchronization: FAIL Help
Test ATM OAM F5 segment ping: N/A Help
Test ATM OAM F5 end-to-end ping: N/A Help
Next Connection
Test
Test With OAM F4

2. To perform the test functions, click **Test**.

CHAPTER 7: MANAGING YOUR NETWORK

This chapter describes how to perform network management tasks within your Compex MRL21E.

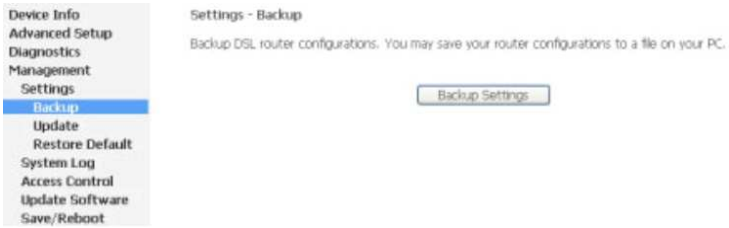
7.1 SETTINGS

When it comes to managing the settings that you have executed to Compex MRL21E, you can choose to:

- backup the settings as a configuration file stored onto your PC
- update the current settings from a previously saved configuration file
- erase the current settings and restore the default factory values

7.1.1 Settings - Backup

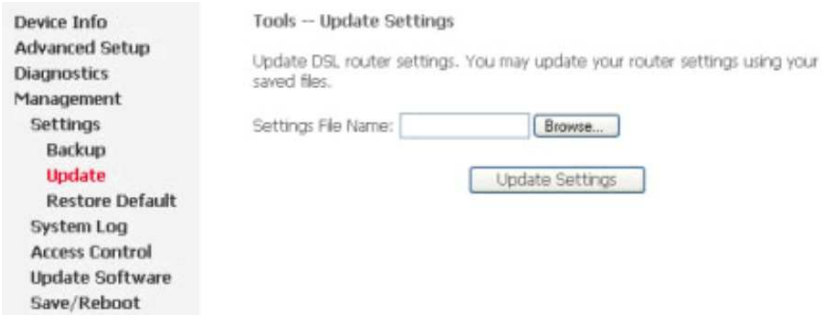
1. Under **Management**, click the **Settings** hyperlink on the left side of the browser to select **Backup**. Then you can see the **Settings-Backup** page appear.



2. To back up the settings as a configuration file saved on your PC, click **Backup Settings**. Select the folder where you want to save the file and key in the file name under which you want to save the settings.

7.1.2 Settings - Update

1. Under **Management**, click the **Settings** hyperlink on the left side of the browser to select **Update**. Then you can see the **Tools-Update Settings** page appear.



2. To import a previously saved configuration file from your PC and update the settings of your modem router, click **Browse** to locate the binary (.BIN or .IMG) upgrade file. Then click **Update Settings**.

7.1.3 Settings – Restore Default

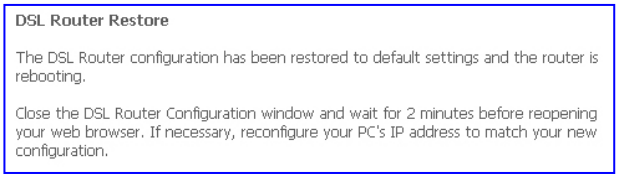
1. Under **Management**, click the **Settings** hyperlink on the left side of the browser to select **Restore Default**. Then you can see the **Tools-Restore Default Settings** page appear.

2. To restore your modem router to its factory default settings, click **Restore Default Settings**. When prompted, click **OK**.

Tools -- Restore Default Settings
Restore DSL router settings to the factory defaults.
Restore Default Settings
Microsoft Internet Explorer
Are you sure you want to restore factory default settings?
OK
Cancel

Take note that all the configuration you have made will be erased and the Compex MRI21E will be returned to its original settings.

3. Upon clicking OK, you are prompted to follow this instruction as shown below.


DSL Router Restore
The DSL Router configuration has been restored to default settings and the router is rebooting.
Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

7.2 SYSTEM LOG

This feature provides you a comprehensive list of log entries reporting events that you have configured for viewing.

7.2.1 System Log – View System Log

1. Under **Management**, click the **System Log** hyperlink on the left side of the browser to select **View System Log**. Then the **System Log** page shows up.

System Log

Date/Time	Facility	Severity	Message
Jan 1 00:05:04	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:05	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:06	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:07	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:09	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:10	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:11	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:12	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:13	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:14	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:15	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:16	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:17	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:18	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:19	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:20	user	info	syslog: insmod -s -k usb0
Jan 1 00:05:21	user	info	syslog: insmod -s -k usb0

2. Scroll up or down to get a better view of the log. The System log is displayed starting from the first event logged.

7.2.2 System Log – Configure System Log

1. Under **Management**, click the **System Log** hyperlink on the left side of the browser to select **Configure System Log**. Then the **System Log-Configuration** page shows up.

Device Info
Advanced Setup
Diagnostics
Management
Settings
System Log
Internet Time
Access Control
Update Software
Save/Reboot
System Log -- Configuration
If the log mode is enabled, the system will begin to log all the selected events. For the Log Level, all events above or equal to the selected level will be logged. For the Display Level, all logged events above or equal to the selected level will be displayed. If the selected mode is 'Remote' or 'Both,' events will be sent to the specified IP address and UDP port of the remote syslog server. If the selected mode is 'Local' or 'Both,' events will be recorded in the local memory.
Select the desired values and click 'Save/Apply' to configure the system log options.
Log: Disable Enable
Log Level: Debugging
Display Level: Debugging
Mode: Local
Save/Apply

2. If you wish to disable the System View Log, select **Disable**. When you set the log to **Enable**, specify the **Log level**, **Display Level** and **Mode** fields.

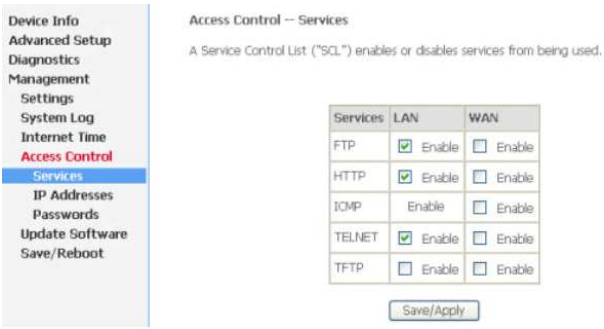
3. To effect the setting, click **Save/Apply**. To check whether the System Log is viewed based on this setting, follow the section **7.2.1 System Log-View System Log**.

7.3 ACCESS CONTROL

This feature enables you manage the user access rights for remote access management based on the services being used, IP addresses and passwords.

7.3.1 Access Control – Services

1. Under **Management**, click the **Access Control** hyperlink on the left side of the browser to select **Services**. Then the **Access Control-Services** page shows up.



2. select which service to allow and whether to allow it from the LAN or the WAN.

3. To effect this setting, click **Save/Apply**.

7.3.2 Access Control – IP Addresses

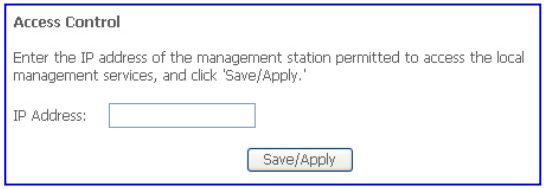
1. Under **Management**, click the **Access Control** hyperlink on the left side of the browser to select **IP Address**. Then the **Access Control-IP Address** page shows up. The **Access Control Mode** is disabled by default.

Device Info
Advanced Setup
Diagnostics
Management
Settings
System Log
Internet Time
Access Control
Services
IP Addresses
Passwords
Update Software
Save/Reboot
Access Control -- IP Address
The IP Address Access Control mode, if enabled, permits access to local management services from IP addresses contained in the Access Control List. If the Access Control mode is disabled, the system will not validate IP addresses for incoming packets. The services are the system applications listed in the Service Control List
Access Control Mode: Disable Enable
IP Address Remove
Add Remove

2. To allow remote management based on an authorized IP address, select **Enable** next to the **Access Control Mode:** radio button. Click **Add**.

3. Key in the IP address of the PC from which a user will be allowed to access the web configuration menu.

4. Click **Save/Apply** to save the setting. Then the **IP Address** is added in the table list.


Access Control
Enter the IP address of the management station permitted to access the local management services, and click 'Save/Apply.'
IP Address:
Save/Apply

5. To add more IP addresses, repeat the steps 2 through 4.

6. If you wish to delete the existing IP address, tick the **Remove** checkbox next to the selected IP address in the table list. Then click **Remove**.

The Compex MRL21E can be managed through 3 types of user accounts:

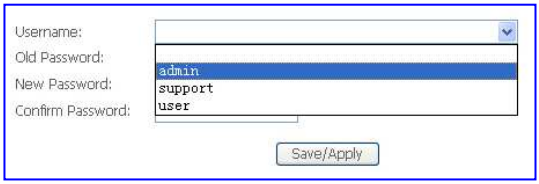
- admin - Full permission.
- support – Maintenance and diagnostics running allowed
- user – Viewing of settings and statistics and firmware upgrade allowed.

7.3.3 Access Control – Passwords

1. Under **Management**, click the **Access Control** hyperlink on the left side of the browser to select **Passwords**. Then the **Access Control-Passwords** page shows up.

Device Info
Advanced Setup
Diagnostics
Management
Settings
System Log
Access Control
Services
IP Addresses
Passwords
Update Software
Save/Reboot
Access Control -- Passwords
Access to your DSL router is controlled through three user accounts: admin, support, and user.
The user name "admin" has unrestricted access to change and view configuration of your DSL Router.
The user name "support" is used to allow an ISP technician to access your DSL Router for maintenance and to run diagnostics.
The user name "user" can access the DSL Router, view configuration settings and statistics, as well as, update the router's software.
Use the fields below to enter up to 16 characters and click "Apply" to change or create passwords. Note: Password cannot contain a space.
Username:
Old Password:
New Password:
Confirm Password:
Save/Apply

2. To change the password of a user account, select the appropriate **Username** from the dropdown menu list.



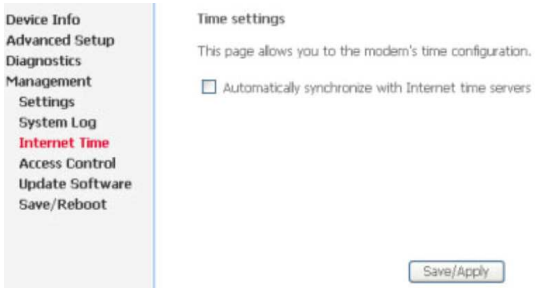
3. Enter the old password, followed by the new password (twice to confirm). Then Click **Save/Apply** to effect the setting.

7.4 INTERNET TIME

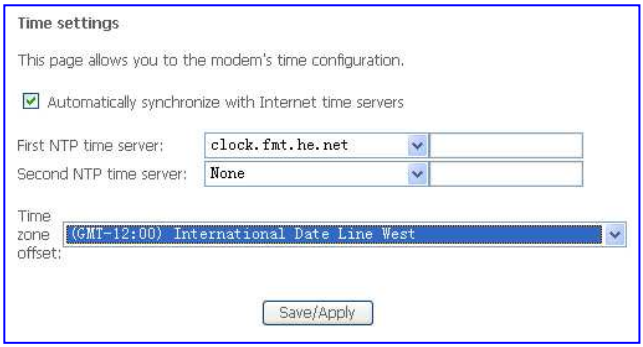
The Compex MRI21E uses the Network Protocol Time (NTP) to obtain the current time and date from several network time servers on the Internet.

7.4.1 Internet Time – Time Setting

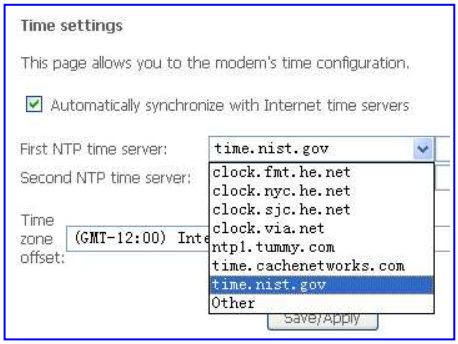
1. Under **Management**, click the **Internet Time** hyperlink on the left side of the browser to display the **Time setting** page. The checkbox next to **Automatically synchronize with Internet time servers** is un-ticked by default.



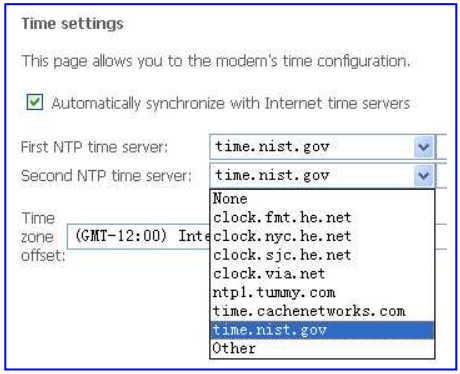
2. When you tick that checkbox, the other time server settings are displayed for you to configure.



3. Select **First NTP time server**.

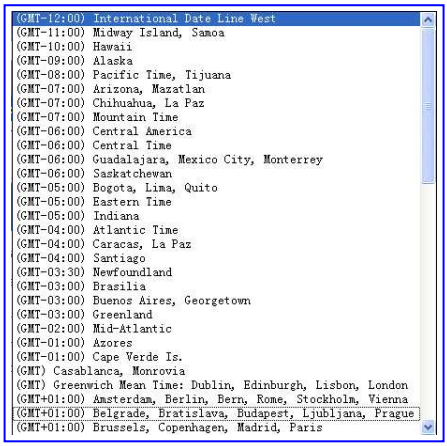


4. Next select **Second NTP time server**.



5. In order to localize the time for your log entries, you must specify your time zone. Select your time zone offset.

6. Click **Save/Apply** to save your settings.



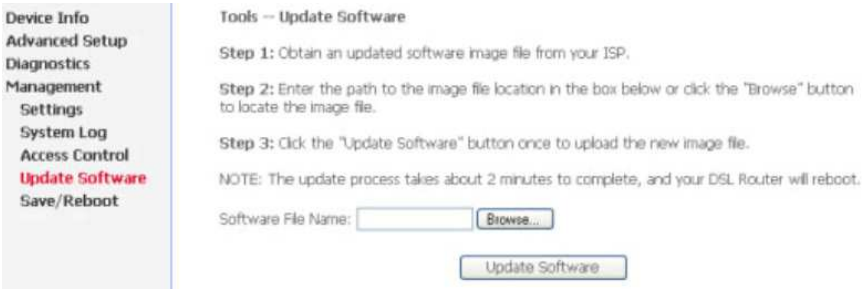
Note: Synchronizing the Compex MRL21E to your local time zone is useful for the blocking schedule to function properly and for accurately time-stamping the log entries.

7.5 UPDATE SOFTWARE

Compex MRI21E's software is stored in the FLASH memory and can be upgraded as Compex releases new software. Upgrade files can be downloaded from the Compex website at www.compex.com.sg.

7.5.1 Update Software

1. Under **Management**, click the **Update Software** hyperlink on the left side of the browser. Then the **Tools-Update Software** page shows up.


Device Info
Advanced Setup
Diagnostics
Management
Settings
System Log
Access Control
Update Software
Save/Reboot
Tools -- Update Software
Step 1: Obtain an updated software image file from your ISP.
Step 2: Enter the path to the image file location in the box below or click the "Browse" button to locate the image file.
Step 3: Click the "Update Software" button once to upload the new image file.
NOTE: The update process takes about 2 minutes to complete, and your DSL Router will reboot.
Software File Name:
Browse...
Update Software

2. Click **Browse** to locate the software file (that is, *.bin or *.img). Then click **Update Software**.

Note: Ensure that you have downloaded the correct updated firmware from the Compex website to your local hard disk before starting the software upgrade.

7.6 SAVE/REBOOT

This feature allows Compex MRI21E to enable new network configuration to take effect or to clear problems with the modem router's network connection.

7.6.1 Save/Reboot – Rebooting

1. Under **Management**, click the **Save/Reboot** hyperlink on the left side of the browser. Then the corresponding page shows up.

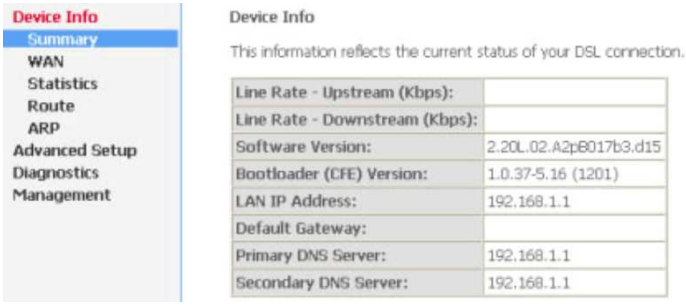
2. Click **Save/Reboot** to save your current settings and reboot the Compex MRI21E.

CHAPTER 8: NETWORK MANAGEMENT INFORMATION

Compex MR121E provides a variety of status and usage device information that is discussed below.

8.1 DEVICE INFO - SUMMARY

1. Under **Device Info**, click the **Summary** hyperlink on the left side of the browser. Then the **Device Info** page shows up.

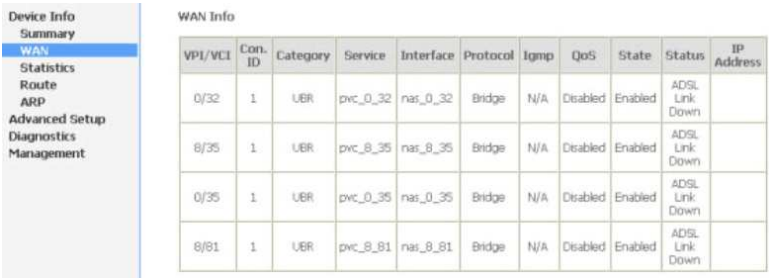


2. The **Summary** page shows the following parameters:

Field	Description
Line Rate - Upstream (Kbps):	The speed at which the modem router is transmitting data into the ADSL line.
Line Rate - Downstream (Kbps):	The speed at which the modem router is receiving data from the ADSL line.
Software Version:	This field displays the router software version.
Bootloader (CFE) Version:	This field displays the bootloader version.
LAN IP Address:	This field displays the IP address being used by the local (LAN) port of the Compex MRL21E on the local network. The default is 192.168.1.1
Default Gateway:	This field displays the router's default gateway
Primary DNS Server:	This field displays the router's primary DNS server.
Secondary DNS Server:	This field displays the router's secondary DNS server.

8.2 DEVICE INFO - WAN

1. Under **Device Info**, click the **WAN** hyperlink on the left side of the browser. Then the **WAN Info** page shows up.



2. The **WAN Info** page shows the following parameters:

Field	Description
VPI/VCI	VPI is the Virtual Path Identifier setting whereas VCI is the Virtual Channel Identifier setting.
Con. ID	This field identifies the connection type.
Category	This field displays the service category.
Service	This field displays the service name.
Interface	This field displays the WAN interface used.
Protocol	This field displays the WAN connection protocol.
Igmp	This feature allows Internet hosts to participate in multicasting. If you are using PPPoE/PPPoA and have selected this feature, it will display **Enabled**.
QoS	If the ISP does not have this function, this field will display **N/A**.
State	This field displays whether you have enabled or disabled the WAN connection.
Status	This field displays the status of the ADSL link.
IP Address	This field displays the WAN IP address of the router.

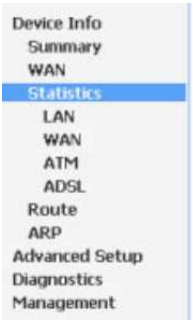
8.3 DEVICE INFORMATION

The **Device Info** feature displays a useful summary of the following:

- LAN traffic
- WAN traffic
- ATM statistics
- ADSL statistics
- Routing table entries
- ARP table entries

8.3.1 DEVICE INFO – STATISTICS - LAN

Under **Device Info**, click the **Statistics** hyperlink on the left side of the browser to select **LAN**. Then the **Statistics-LAN** page shows up.



Statistics -- LAN

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
Ethernet	1037108	9663	0	0	3656790	11701	0	0

Reset Statistics

8.3.2 Device Info – Statistics - WAN

Under **Device Info**, click the **Statistics** hyperlink on the left side of the browser to select **WAN**. Then the **Statistics-WAN** page shows up.

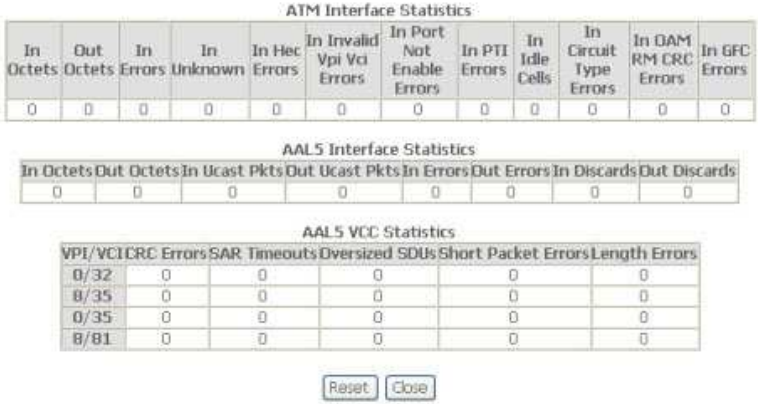
Statistics – WAN

Service	VPI/VCI	Protocol	Interface	Received				Transmitted			
				Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
pvc_0_32	0/32	Bridge	nas_0_32	0	0	0	0	73213	725	0	725
pvc_8_35	8/35	Bridge	nas_8_35	0	0	0	0	73213	725	0	725
pvc_0_35	0/35	Bridge	nas_0_35	0	0	0	0	73213	725	0	725
pvc_8_81	8/81	Bridge	nas_8_81	0	0	0	0	72905	723	0	723

Reset Close

8.3.3 Device Info – Statistics -ATM

Under **Device Info**, click the **Statistics** hyperlink on the left side of the browser to select **ATM**. Then the **Statistics-ATM** page shows up.



ATM Interface Statistics

In Octets	Out Octets	In Errors	In Unknown	In Hec Errors	In Invalid Vpi Vci Errors	In Port Not Enable Errors	In PTI Errors	In Idle Cells	In Circuit Type Errors	In OAM RM CRC Errors	In GFC Errors
0	0	0	0	0	0	0	0	0	0	0	0

AAL5 Interface Statistics

In Octets	Out Octets	In Ucast Pkts	Out Ucast Pkts	In Errors	Out Errors	In Discards	Out Discards
0	0	0	0	0	0	0	0

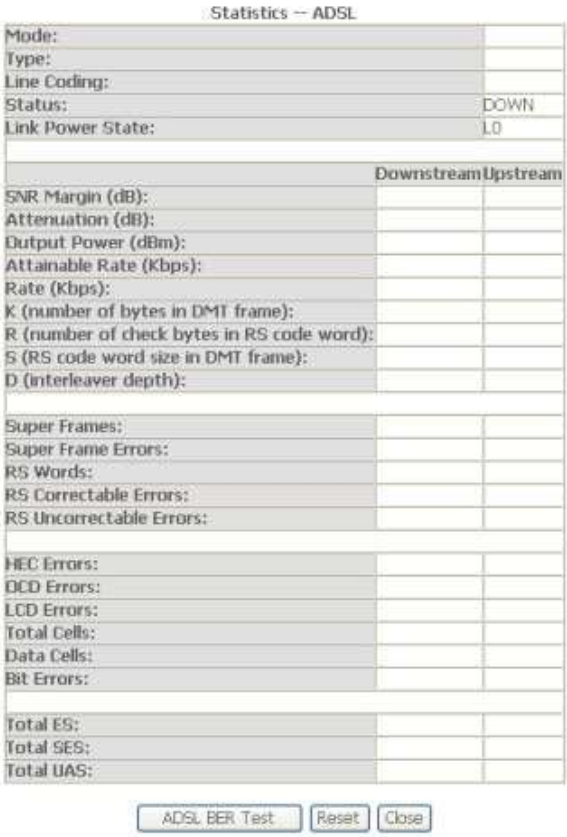
AAL5 VCC Statistics

VPI/VCI	CRC Errors	SAR Timeouts	Oversized SDUs	Short Packet Errors	Length Errors
0/32	0	0	0	0	0
8/35	0	0	0	0	0
0/35	0	0	0	0	0
8/81	0	0	0	0	0

Reset Close

8.3.4 Device Info – Statistics - ADSL

Under **Device Info**, click the **Statistics** hyperlink on the left side of the browser to select **ADSL**. Then the **Statistics-ADSL** page shows up. Please take note that the page shows nothing because the modem router is not yet connected to the ADSL line. As a result, its status is read as "DOWN".



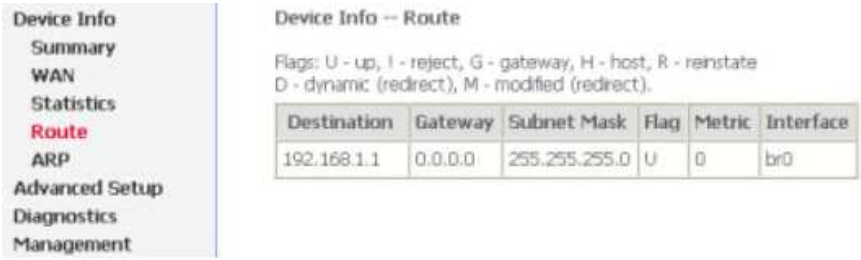
Statistics -- ADSL

Mode:		
Type:		
Line Coding:		
Status:		DOWN
Link Power State:		L0
	Downstream	Upstream
SNR Margin (dB):		
Attenuation (dB):		
Output Power (dBm):		
Attainable Rate (Kbps):		
Rate (Kbps):		
K (number of bytes in DMT frame):		
R (number of check bytes in RS code word):		
S (RS code word size in DMT frame):		
D (interleaver depth):		
Super Frames:		
Super Frame Errors:		
RS Words:		
RS Correctable Errors:		
RS Uncorrectable Errors:		
HEC Errors:		
OCD Errors:		
LCD Errors:		
Total Cells:		
Data Cells:		
Bit Errors:		
Total ES:		
Total SES:		
Total UAS:		

ADSL BER Test | Reset | Close

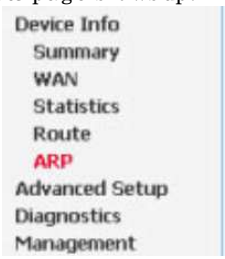
8.4 DEVICE INFO – ROUTE

Under **Device Info**, click the **Route** hyperlink on the left side of the browser. Then the **Device Info-Route** page shows up.



8.5 DEVICE INFO – ARP

Under **Device Info**, click the **ARP** hyperlink on the left side of the browser. Then the **Device Info-Route** page shows up.



Device Info -- ARP

IP address	Flags	HW Address	Device
192.168.1.1	Complete	00:01:80:0E:86:37	br0

CHAPTER 9: TROUBLESHOOTING GUIDE

This chapter gives information about troubleshooting your Compex MRL21E. After each problem description, instructions are provided to assist you in diagnosing and solving the problem.

9.1 TROUBLESHOOTING

9.1.1 Check the Line and the Device

- Check whether the **POWER** LED is on.

If not, make sure that:

  - the power adapter is correctly connected.
  - you are using the power adapter provided.
  - the switch of the power supply is turned on.

- Check whether the **PC** LED is on.

If not, make sure that:

  - the cable connecting your PC to the modem is well-inserted.
  - the cable provided is used.

- Check the **LINK** LED to see if it is flashing. If no fast flashing is observed within 3 minutes, please check whether the phone line has been correctly placed and whether the ADSL splitter is correctly connected. If multiple extensions have been installed, make sure that the splitter is installed prior to the junction box of phone line. If the above items are confirmed and still no fast flashing of the **DATA** LED is observed, call the ISP to query whether ADSL service has been activated on your line.

- Check the **LINK** LED to see whether it changes status from fast flashing to always on, or whether it changes status from always on to fast flashing. If this phenomena occurs constantly, please contact your ISP to check your phone line and signal quality.

If there is no problem in the above items, the line and the device should be working properly. Please proceed.

9.1.2 Check your Configuration

We explain the configuration of PPPOE using Windows 2000 operation system as an example. For other operation systems, the process is similar.

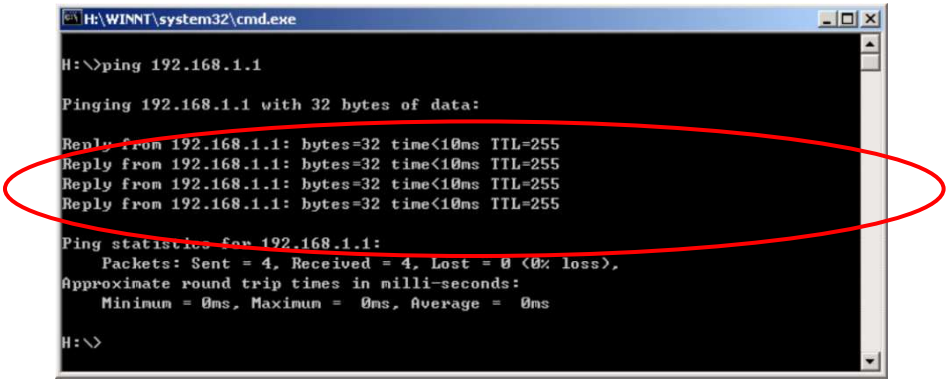
1. Enter the device manager to check if your Ethernet adapter is correctly installed. If any problem exists, please re-install it.

2. Verify the TCP/IP settings of your PC. See section 4.1.1 for more details.

3. Try to run command "ping 192.168.1.1" in the command line window. If the response returns "time out", please check your cable connection and IP settings.

4. If you receive a ping reply, try to run ping to a known outer URL. For example, "ping www.compex.com.sg" If there is no reply, please proceed to Step 5 to check if the configuration is correct.

Note: To open the command line window, click on **RUN** from the Windows Start Menu, enter **cmd** in the input box and press **Enter**.



5. Verify the following:
   i. Check the number of WAN connections. If there is more than one connection for troubleshooting purposes, delete the unused connections.
   ii. Check whether you have set up the correct WAN connection type, the following information should be provided by your ISP: VPI and VCI, username and password.
   iii. Then make sure that "using NAT" and "default gateway" have been selected with a tick.

Make sure that the above parameters are saved after configuration and that you have rebooted the Compex MR121E.

APPENDIX : TECHNICAL SPECIFICATIONS

Standard Compliance	• ANSI T1.413 issue 2, ITU-T G.992.1 (G.dmt) and G.992.2 (G.lite) compliant ADSL2, ADSL2+, RE-ADSL compliant • IEEE 802.3, IEEE 802.3u & IEEE 802.1D
Multiple Data Encapsulation Formats Support	• RFC 2364 PPP over ATM AAL5 (PPPoA) • RFC 2516 PPP over Ethernet relay (PPPoE) • RFC 1483 LLC&VCMUX (bridge and routing mode) multi-protocol encapsulation over ATM AAL5 • RFC 1577 Classical IP and ARP over ATM
ATM Support	• ATM AAL5 UBR&CBR • Multiple PVC complies with ATM Forum UNI3.1/4.0, OAM F4/F5 complies with I.610 • VPI/VCI range 0-255 0-65536
Network Access	• IP routing protocols: Static routing and RIPv1, v2 • 802.1d transparent bridging • DHCP server automatically assigns IP address to PCs on the LAN • DHCP client capability automatically gets IP address from DHCP server at ISP • DNS Relay Agent • NAT enables multiple PCs on the LAN to access the Internet via single pubic IP address • Multicast proxy support (IGMP Proxy) for support of video applications

	• VPN pass through • DNS proxy • Virtual Server, DMZ, PPP Half Bridge
Network Management	• Web Based configuration software • Restore to factory defaults via Hardware or through the configuration page
Security	• MAC filtering • Password protected system management terminal • PAP/CHAP authentication for PPP mode
LED Indicators	• POWER: power on or off indication • LINK: ADSL linked or linking • PC: Ethernet connection • DATA: Ethernet data transfer
Interface	• LAN: RJ-45 port for 10Base-T/100Base-TX Ethernet connection • WAN: RJ-11 port for ADSL Line • USB: Universal Serial Bus port • POWER: Power Jack 2.1mm for Power in
Power	Power supply: • Input: Customized as requirement • Output: 12VDC, 700mA
Environment Requirement	Temperature: • Operating : 0ºC to 40ºC • Non-operating: -10ºC to 70ºC Humidity: • Operating : 10% to 90% non-condensing • Non-operating: 5% to 90% non-condensing

Physical Dimension	150x 140 x 31 mm (medium casing)/ 128 x110 x32 (small casing)
Weight	220 g/ 180g

Compex MRL21E

Описание Характеристики Отзывы

Оформление кредита онлайн за 2 минуты

Доставка заказов по всей России

Круглосуточная служба поддержки

Оплата заказа любым удобным способом

сотмаркет О компании Доставка и оплата Новинки Отзывы Акции и скидки